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## Original Communications.

### *PROPHYLACTIC HYGIENE.**

BY PROFESSOR DUJARDIN-BEAUMETZ, PARIS, FRANCE.†

LECTURE XI.—ON THE PROMOTION OF PROPHYLACTIC HYGIENE BY LEGISLATION.

BY DR. A. J. MARTIN.

SANITARY LEGISLATION IN THE UNITED STATES.

BY E. P. HURD, M.D.

[THE last lecture of the series on Prophylactic Hygiene was delivered in Cochin Hospital by Dr. A. J. Martin. It was thought best to reproduce this lecture, as being the final lecture of the course, and as containing considerable matter which will be of especial interest to American readers, when presented in contrast with the superior sanitary systems which prevail in the United States. In accordance with the wish of Dujardin-Beaumetz, the translator has endeavored to give briefly the main features of the health organizations of the United States.]

SANITARY LEGISLATION IN FRANCE.

The various prophylactic measures which Dr. Dujardin-Beaumetz has set forth in his course of lectures ought, in order to be properly enforced, to find their sanction in a certain number of legal and administrative provisions. It is the sum of these provisions which constitutes sanitary legislation, the end of which is to preserve and maintain the public health.

In fact, if government can exercise but an

* Advance sheets of a lecture delivered in Cochin Hospital, and translated for this journal by E. P. Hurd, M.D.

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indirect action on some of the causes of disease or insalubrity, if often it must limit itself to providing, through proper experts, instruction in the principles of sound hygiene under all its forms, there will be cases where direct interference will be demanded,—as, especially, where the insalubrity depends on a known external cause.

No one has power of himself to compel of his neighbor the suppression of an infectious pool or of a heap of pestilential garbage, or the isolation of a patient affected with a transmissible disease. No one can undertake of himself to contend against the dangers threatened by the insalubrity of a city which has neither sewers nor good drinking-water, and force the municipal authorities to make it healthy. Measures of sanitation imply a constraint with regard to private individuals or the local powers, and it belongs to the public authority to enforce the needed compulsion.

If it be a matter of insuring the wholesomeness of all the products which make part of the daily food of the people, it is by special restrictions with regard to the liberty of commerce that it is necessary to proceed; and, among the agencies put forth for this end, we may enumerate inspection by state officials, heavy penalties imposed for violation of sanitary requirements, the confiscation and destruction of objects spoiled or adulterated, or otherwise injurious to the health of the consumer. Here, it is necessary to protect the health of children against the neglect of selfish nurses, or against the inhumanity of parents, who, for purposes of gain, put their offspring at too young an age into workshops, factories, or other manufacturing establishments, and thus prematurely stunt the brain-development and exhaust the forces. There, it is against the invasion of contagious diseases that it becomes necessary to protect the community, and all the prophylactic agencies mentioned in the previous lectures of this course need to be called into exercise and enforced by the government. There must be official information of cases noted, isolation, as far as this is possible, disinfection under all its forms, preventive vaccination for smallpox and perhaps rabies.

It belongs without doubt to each individual of a community to take of his own accord the precautions which he deems necessary against the invasion and propagation of transmissible diseases. It is incumbent on each one to sequestrate himself from the numerous causes of ill-health in the environment where he lives. This is, however, a matter of private duty, which, before it can have the extension which is desirable, must await the progress of good morals, right habits of living, and intelligence. Hence, no one has ever pretended that in a great number of circumstances the public authorities—as the law certainly confers on them the right—have not also the duty to supplement efforts made by the citizens themselves in the direction of prophylactic hygiene. It is dangerous to intrust such responsibilities to citizens simply, or to the combined efforts of a number of citizens, for these efforts will be too often dilatory and feeble. Let the municipal supervision be thorough and impartial, let the ruling authorities have in such matters a responsibility and control sufficient to scrupulously and completely protect the public interests, and the results will show to the satisfaction of everybody that if prophylaxis in its essence belongs to the individual as a part of his duty to himself and the society in which he lives, it also belongs in an important sense to the representatives of the people, who ought to be directed in their efforts to promote sanitary welfare by the highest wisdom of the age.

Such are the principles which seem to us to justify every kind of sanitary legislation. Let us now see how they are applied in France, and what are the nature and extent of the powers conferred on the administrative authorities in matters of prophylactic hygiene.

Sanitary legislation in France includes a certain number of laws and decrees, and a body of regulations, with specifications of the proper authorities for their enforcement, and the discretionary powers which these are to possess.

Some of these legislative provisions require the co-operation of all the ruling powers of the country (local and general governments); others are left to the discretion of the local authorities. Lastly, there are regulations which touch at the very root of our social organization.

In a general manner it may be said that it is to the municipal authorities that the care of the public health is confided in France; the rights and prerogatives of the municipal organization include the provisions essential for this end. Moreover, a special law regarding unhealthy habitations confers particular powers on the municipal councils, and the law pertaining to the protection of infants authorizes the departments to adopt rigorous

measures as to everything that concerns the hygiene of early life. To the state, on the other hand, is reserved more directly the sanitary police management of cholera epidemics and that of epizootic diseases, the works in general of sanitation and public salubrity, the care of public institutions, the supervision of articles of food. Lastly, certain provisions of the codes are directly applicable to the public health.

We shall not be able here to examine in detail all this legislation, to which voluminous works have been devoted. It will suffice to indicate the most essential parts, and to inquire if it gives satisfaction to the legitimate exigencies of the public health, while protecting as far as possible private interests.

In France the basis of sanitary legislation is to be found in the powers which the municipal authority since the Revolution has possessed with regard to matters of public hygiene. The mayor is the principal agent in the execution of sanitary regulations; the prefects have also the obligation to enforce these in their respective departments, but their action is in a certain measure trammelled and limited by the local authorities. The Article 97 of our last municipal law (April 5, 1884) reproduces the provisions inserted for this end in the laws which have been successively elaborated on this subject since 1789 and 1790. I here quote the following passage:

"The municipal police has for its object to insure the good order, safety, and health of the public. The duties of this branch of government consist, notably, in the care of preventing by suitable precautions and of suppressing by all possible means all such public calamities as epidemic and contagious diseases, in providing for the needs of the suffering, and, if occasion may demand it, in summoning the aid of the higher executive authorities."

Hence the municipal authority is under obligation to superintend with the greatest care all matters pertaining to the salubrity of the commune; it cannot completely accomplish this without imposing restrictions on the use of private property. And here we have a plain rule that, if a proprietor is at liberty to do what he pleases at home, he has no right to perform any act which may have *exterior* consequences injurious to the public health; in the enforcement of this principle, the municipal authority may legally interfere.

But the mayor possesses no power which enables him to be the judge of the *means* for attaining the end which the law thus assigns to his intervention in matters of prophylactic hygiene, and he cannot of himself initiate any measure which may involve the finances of the commune (as by the levying of special taxation), even in cases of absolute urgency. Such are the restrictions which law and jurisprudence impose on his powers, and these restrictions are still further increased by the fact that it is never in his power to order any *exclusive* means for the suppression of the cause of the insalubrity.

During the course of the last few years, since the cholera epidemic of 1884, public attention has been more earnestly directed to these matters. Two important legal decisions have shown how restricted is our civil jurisprudence in everything pertaining to sanitary regulations.

In regard to the first of these decisions, the mayor of the city of Caen, on September 27, 1884, with the advice and authority of the Commission of Hygiene, ordered the suppression of a cesspool situated in a court contiguous to several dwelling-houses. The stench which arose from matters there undergoing putrefaction rendered living in the vicinity almost intolerable, and it was plain that the infiltrations from this cesspool were liable to contaminate the subterranean water-sources on which the inhabitants of that quarter depended for their supply of drinking-water. The proprietor appealed from the mayor's order, and the Court of Appeals ruled, July 25, 1885, that the suppression of this cesspool, as the exclusive means of abating the nuisance, as long as there might be other means quite as efficacious and less costly to the proprietor, constituted an outrage against the right of property, and an overstepping of the power belonging to a mayor, these officers not being authorized to determine for themselves the nature and importance of undertakings designed for the promotion of the public health.

The second decision pertained to an act of the mayor of Toulon, who, during an epidemic of smallpox, ordered certain houses in which cases of this disease had occurred to be whitewashed inside. One of the citizens to whom this order applied refused to allow his house to be whitewashed. He appealed first to the police tribunal, which ratified the decree of the mayor. Then he carried the matter to the Court of Appeals, which decided that a municipal officer exceeds his prerogatives when he prescribes measures of sanitation

under such conditions. He cannot indicate an exclusive means of prophylactic hygiene when there may exist other means capable of attaining the same result. At the same time, the Manual of Dalloz contains this just remark relative to this point: "To confer on the municipal officer the right to take precautions suitable for preventing epidemics is evidently to make him judge of the means to accomplish this end. How can this official fulfil the important trust assigned to him if he is obliged to adopt all the ways and methods suggested by private citizens, and if he has not the right to prescribe the means which his wider knowledge and the experience of the best sanitary authorities have shown to be most efficacious?"

The same remark is applicable to the powers conferred upon prefects by virtue of Article 98 of the municipal law of April 5, 1884. This law maintains their right to make general regulations in regard to the following matters: Safety, salubrity, tranquillity, and nothing more; it permits them to make less general regulations applicable to a group of communes without previous requisition addressed to the mayors. Moreover, it authorizes the prefects to interfere when a mayor, after due notice, neglects to do his duty in enforcing any measures which the maintenance of the health, safety, and tranquillity of the public may demand. But the prefect has not the right to take such authority into his own hands, except within the limits which are assigned to the powers of the mayor,—*i.e.*, he can only act where the latter acts,—and he is subject to the same limitations. He has not the right to indicate any particular means of prophylactic hygiene in a given case, and he cannot put upon the commune any expense without the authorization of the municipal council. For the expenses of hygiene are not included by the law among those which are obligatory; so that the decrees of mayors in matters of this kind can only be couched in general terms, and cannot entail any costs to be put to the account of any one of the departments without the consent of the elective boards. Whence it follows that all measures which do not enter into these categories may be prescribed by the mayors or by the prefects in default of these officers. Thus, the declaration of diseases may be required by them of physicians; they may even order general vaccination throughout their commune, isolation, disinfection, etc., provided they do not render obligatory any means for executing these provisions. But thus far mayors and prefects have given little evidence of anything but pusillanimity and ignorance, even when they have been acting with the best intentions. Not a mayor has dared to assume much responsibility in matters of prophylaxis, however desirable prompt and decisive action might have been, nor has the civil government yet deemed it worth the while to come to the aid of the municipality in accordance with the spirit and intent of Article 97 of the municipal law.

When France first became seriously alarmed by the dangers which attended the importation of the exotic pestilential diseases,—*i.e.*, yellow fever, cholera, and the plague,—the government came to a realization of the fact that the then existing legislation was notoriously insufficient; so a special law was passed to meet the exigencies caused by these scourges, and limited solely to them. This is the law of March 3, 1822, the only law of sanitary police applicable to man which France possesses. In accordance with the provisions of this law, the government fixes by ordinances,—1, the countries whose products should be subjected to sanitary regulations; 2, the measures to be observed on the coasts, in the harbors and roads, in lodging-houses, and all suspected places; 3, the extraordinary measures which the invasion, or the fear of a pestilential disease, renders necessary on the frontiers or in the interior. It regulates the constitution, the prerogatives, and the jurisdiction of the authorities charged with the execution of these measures, and delegates to them the power of applying provisionally in cases of urgency the sanitary *régime* to portions of the territory which might be unexpectedly menaced.

The terms of this law, it will be seen, are very general, and give to the public authorities almost unlimited powers in cases of cholera, plague, or yellow fever, but only in such cases. The prescriptions of the sanitary police—*i.e.*, the aggregate of the sanitary regulations of the maritime police—may become then applicable to the whole or a part of the territory, if it has been invaded by the pestilence. The penalties which this law inflicts are very grave,—from a year in jail and a fine, to banishment, forced labors, and even death for all who evade the sanitary ordinances, make lying declarations, or neglect to give necessary information to the authorities.

These penalties, in many respects excessive, indicate the terror which these particu-

lar diseases engender in the public mind. The law of March 3, 1822, in fact, gives the municipal authorities full power in such cases to execute all the sanitary measures indicated in the previous lectures of this course, and we might well ask why such legislation should be adapted only to diseases relatively rare in our country, and not to those which are continually ravaging our populations, and for which the same prophylactic measures are quite as efficacious?

Whatever theory one may entertain regarding the pathogeny and etiology of transmissible diseases, it is universally admitted that these diseases have very close relationship with the unhealthy state of the environment in which they make their appearance, just as the human organism on which they commit their ravages is influenced for good or ill by the salubrity or unhealthfulness of the environment in which it lives. Hence the necessity of insuring the healthfulness of inhabited districts and houses.

A state law of 1807 prescribes in its Article 35 that all works of sanitation which concern cities and communes shall be ordered by the government and the expenses charged to the interested communes. This principle is fair and reasonable. It is proper and just that the state should be invoked to interfere in opposition to private interests, to the selfishness or inertia of individuals and corporations, and prevent a focus of insalubrity from becoming a danger to the entire community, and that those proprietors who are to profit the most by sanitary works should be taxed therefor in proportion to the benefits received; but, practically, these legal provisions are attended with so many difficulties in their execution, and sanitary enterprises are so little to the national taste, that the law has almost been a dead letter. This has been to a considerable extent the case with regard to legislation to protect our water-sources, whose pollution by the sewerage of cities and the refuse of industrial establishments is so frequent. The act of 1810 is notoriously insufficient. . . .

It remains to examine into the sanitary legislation applicable to dwelling-houses. The law should take cognizance of and promptly suppress all agencies which oppose the salubrity of habitations, and all citizens should be compelled under heavy penalties to interest themselves in maintaining the proper hygiene of their premises. The law of April 13, 1850, applies only to unhealthy lodgings and out-buildings, let or occupied by persons other than the proprietor, usufructuary or commoner, and gives too much liberty to the tenant within the precincts of his home. According to the Speaker of the legislative assembly, M. de Riancey, "when the proprietor himself occupies his house, the law lets him alone,—he is absolutely free; if he wishes to injure himself, the law cannot prevent it." This liberty of suicide, as it has been called, cannot but breed disrespect and license. It is a recognized fact that the proprietor who lives in an unhealthy habitation may injure others besides himself,—his family, his employés, his servants, and his neighbors, and all have equally the right of protection from the public authority. No one has the right to have in his dwelling-house a centre of infection. In this connection it is interesting to notice that those people who have been the greatest advocates of individual liberty have been the most ready to promulgate laws restrictive of personal liberty.

[Allusion was made to the abuse of privilege on the part of tenants, who are often allowed by proprietors to keep their houses in a filthy, slovenly state, and even make them foci of contagion. In cases of this kind the law recognizes only the proprietor, who may be called to account when the premises are judged a nuisance, and be compelled to cleanse the house or otherwise abate the nuisance. By the law of April 13, 1850, all dwelling-houses are termed "unhealthy" which are shown to be in a state dangerous to the life or health of the inhabitants. But this law fails to define with any degree of precision what are to be understood as causes of insalubrity. Hence there is constant difficulty in obtaining a satisfactory judgment in cases of complaint made to the municipal courts, the prefect of the police, or the State Council. This has been exemplified on occasions when an attempt has been made to obtain legal decrees compelling certain proprietors to furnish good potable water to their tenants. Several decisions have shown either the pig-headedness of the authorities or the inadequacy of the laws.]

Such are the principal points of French sanitary legislation in regard to matters pertaining to the prophylaxis of epidemic and transmissible diseases, and the rendering healthy of places when these communicable diseases have occurred. This legislation is at once too narrow and too general. Too general, in that it does not define the powers of the administration, while theoretically it seems to accord them considerable, even ab-

solute, dictatorial authority. Too narrow, since in practice these powers are generally without effect by reason of the impediments and limitations by which they are surrounded. The health officials have the right to prescribe all proper measures of prophylactic hygiene, but they are not allowed to specify the means of execution, and the money for carrying out these measures, however urgent they may be, can rarely be obtained without considerable vexatious delay. They are able, in principle, to insure sanitation, but only after formalities without number and without precise rules.

Hence the necessity of a revision of our legislation is imperiously felt, by reason, especially, of the progress which prophylactic hygiene has made in the last few years; there is need that the intelligent supervision and care of the public health should be a reality, and should be aided, not hindered, by the law, and that prophylaxis should immediately follow the communicated information of the disease. Sanitary expenses should be included among the expenses that are made obligatory, and when contagious diseases appear in a community, physicians and all other persons who have knowledge of such diseases should be compelled to report them instantly to the proper health officers. Moreover, the law ought to indicate, among measures to be taken for the sanitation of habitations, those which are urgent and those which may be deferred. In cases of the first kind, when the urgency has been affirmed by a proper board or commission,—*i.e.*, in a time of epidemic, flood, fire, etc.,—when the immediate safety of the inhabitants is concerned, there should be no delay in carrying out the provisions of the board or council.

[M. Martin concludes by alluding to the results achieved by boards of health in other countries, which ought, he said, to inspire his own countrymen to more public spirit and enthusiasm in the promotion of undertakings designed to protect the people from the causes of disease.]

### SANITARY LEGISLATION AND BOARDS OF HEALTH IN THE UNITED STATES.

From the foregoing exposition, it will be seen that sanitary legislation is in a somewhat unsettled and unsatisfactory condition in France. In this country we are seldom compelled to complain of insufficiency of laws, of the inadequacy of such as exist, of lack of the executive power to enforce them, or of a want of public sentiment to support all needed hygienic measures.

Of no part of this great country, unless it be some district beyond the pale of civilization, can it be said that there is no local authority to procure the immediate arrest and isolation of a person dangerous to the community in consequence of some infectious disease from which he is suffering. In the seventh lecture of this course Dr. Dujardin-Beaumetz makes this astonishing statement: "You should be cognizant of this strange and almost incredible fact that while we have the right on the public highway to arrest a man who has become a nuisance, or dangerous to his fellow-men by reason of arms which he carries, or the tumult which he occasions, or the outcries which he utters, we cannot prevent an individual affected with smallpox from perambulating the streets and spreading disease and death around him." Should such a phenomenon happen in any of the thickly-settled parts of the United States,—provided the disease were known to be *smallpox*,—it would take but a very few minutes to procure the arrest of such a person. He would be seized without the formality of a writ and removed to a place of safety. If the police were derelict in their duty, some private citizen, even at the risk of his own life, would arrest and sequestrate the offender; the sanction of the local board of health would be easily obtained, or the judge of the police court would declare the arrest justifiable and necessary.

So with regard to a case to which Mr. Martin has alluded, and in which is exemplified the pusillanimity of the authorities in France to whom is assigned the care of the public health. A house proprietor or tenant has in his family one or more cases of scarlet fever or diphtheria, and has thus established a centre of infection for his neighbors, who come and go unconcernedly. If this were yellow fever, cholera, or the plague, Mr. Martin virtually says, the authorities would know how to act, but, in view of its being a less deadly pestilence, they are practically powerless.

We will suppose such a family epidemic to happen in one of our cities or towns. A complaint is at once made to the board of health. Or, even before the complaint has been made, the attending physician of the family anticipates the complaint by reporting the outbreak to the agent of the board of health, as the law requires him to do. A card is immediately nailed over a conspicuous part of the infected house, stating the disease, and warn-

ing people to keep away. Stringent measures of isolation are now put in execution. Children, especially, are not allowed to enter the house, nor is any member of the family allowed to go to school or otherwise expose other persons to the contagion. Thorough disinfection from time to time, and especially at the end of the sickness, is enforced.

So if a tenement is found to be offensively filthy, if the proprietor keeps pigs which are a nuisance, throws slops and garbage on his neighbor's premises, etc., a complaint is made to the board of health, which has full power to abate the nuisance, or, in the event of the board refusing to act, the complaint may be carried before the State board of health, which has power under such circumstances to act, and all expenses of any investigation or prosecution may be assessed against the proprietor who has kept his own premises, or made his neighbor's, insalubrious.

This country has never been without sanitary legislation adapted to the necessities of the times, and long before the existence of State boards of health, or municipal boards of health, there were provisions in the by-laws and codes of all our cities for the suppression of objects prejudicial to the public health, such as garbage, carrion, stagnant pools, etc.; for the isolation of persons affected with contagious diseases, for the quarantine of ships hailing from suspected ports, for the prevention of the sale of diseased meat or impure milk, for the preservation of water-sources from pollution. Our fathers perfectly well understood that the primary intent of all government is the protection of the people, and that this protection means as well prophylaxis from the pestilence which walks in darkness as from the destruction which wastes at noonday.

In New England the primitive system of election of "select-men," "police-officers," "constables," etc., at the Town-Meeting still prevails in rural districts; in the Western States the town officers are elected everywhere by ballot, as in all our cities. The select-men of towns generally constitute the "board of health." In cities the mayor and board of aldermen, till a comparatively recent date, were invested with the functions of health officers.* The duties of these officers were rendered especially burdensome and disagreeable by the constant necessity imposed upon them of the supervision of sanitary matters; their salary was either nothing, or next to nothing, and complaints of nuisances requiring visits of inspection were frequent. These officials, moreover, not being medical men, were not always ready to appreciate the need of undertakings for the promotion of general sanitation, which might entail considerable expense on individual citizens or a large draught on the public treasury. Hence State laws were enacted which relieved all the elective departments of these onerous and responsible duties by the establishment of boards of health, these health officers to be appointed at specified times by the mayor and board of aldermen.

Boards of health derive their power partly from the mayor, council, and city ordinances, and partly from the State charter, which specifies their rights, duties, and prerogatives. These officials may be removed by the mayor for cause. Their by-laws and decrees must not conflict with previous ordinances of the city government, for they in no sense constitute a higher power than that to which they owe their appointment. Instances of contravention by acts of the board of health of statutes already in force are sufficiently numerous. The board of health of a city in the State of New York some years ago decided that a certain meat-market was, from its situation, a nuisance and prejudicial to the health of citizens, and they obtained an injunction against it as a first step to its suppression. The proprietors appealed to the city government, which had given them a charter or "permit," under which they were doing business. The board of health, finding that they would be baffled in their attempt to suppress what was in their judgment a first-class nuisance, took advantage of their temporary injunction, and had the obnoxious buildings removed. The butchers decided not to rebuild in that particular locality, and sued the city for damages, which they obtained; no prosecution against the board of health individually or corporately was deemed advisable or practicable. The board was, however, censured as exceeding their jurisdiction.

In another city there is an old ordinance prescribing the rights and immunities of a certain almshouse within the city limits. There is a clause in this ordinance permitting the keeping of pigs on the premises of the almshouse. There is another ordinance

* What I have said in this article is applicable principally to New England, with whose health organizations I am better acquainted than with those of the Southern, Middle, or Western States. The general constitution and functions of boards of health are, however, similar in all the States of the Union.

forbidding citizens to keep swine, but this law is a dead letter, except when adopted and enforced by the board of health. On one occasion the board attempted a regulation forbidding the keeping of pigs by all parties within the city limits, and ordered the pigs to be removed from the almshouse. An appeal was taken from their injunction, and the latter was declared to be illegal.

A frequent cause of complaint before boards of health is the filthiness of stables, and in more than one instance the board has been appealed to to abolish an obnoxious stable. Such an act would clearly be an invasion of the rights of property, and could only be justifiable under peculiar circumstances. It is necessary that horses shall be kept in cities, and that there shall be stables, and all city governments permit the establishment and maintenance of private stables and livery stables. All that boards of health can do when complaint is made of certain stables as obnoxious and filthy is to insist that the proprietors shall keep them in a tidy and clean condition. If a proprietor, after due notice, refuses to remove an offensive manure-heap and otherwise make his premises clean, he can be prosecuted for such disobedience and fined; it is also within the power of the board of health to cause the premises to be made clean at the expense of the proprietor.

It must, however, be added that the continued exercise of any employment or business whereby the health of communities is menaced can be prohibited, but if the person so offending bases his right to carry on his business in the particular place or building on a previous "assignment" or permit by the local government or board of health, it will be necessary to appeal to the superior court, which, on giving a hearing to both parties, may revoke the assignment, and forbid the further use of the premises for the exercise of the offensive trade or employment.

Such are some of the limitations of our boards of health. These officers are appointed by the mayor and his council, and are a subordinate branch of the municipal government. They can be removed for cause, —*i.e.*, if neglectful of their duties, or if they exceed their prerogatives. They can spend only a limited amount of money. If a smallpox pestilence were to break out, or any other sudden emergency should require a considerable outlay of money, the board of health could draw on the city treasury for a sum not exceeding two thousand dollars. If a greater expenditure were needed, they must call on the city council to grant it. They are, in fact, dependent on the city council for their appropriations, which they are expected not to exceed, unless there should be some unforeseen and urgent need. They can superintend sewerage (*i.e.*, insist on cleanliness, on the proper flushing of pipes, on traps, etc.), where a system of sewerage already exists, and oblige citizens, under certain circumstances, to connect pipes with sewers, but they cannot compel a city to undertake sewerage-works, however pressing may be the necessity therefor. Operations of this kind can only be instituted by the city council. They can approve or condemn the drinking-water of a city, and on occasions can close up suspected wells when there is good reason for it, but this is the extent of their jurisdiction in this particular. They can require privies and cesspools to be cleaned as often as is deemed necessary, and they can insist that this shall be done in an odorless and inoffensive manner, but when they grant monopolies, which increase the cost to citizens and shut out competition, they exceed their powers and become oppressive.

From what has been said, it will be seen that in the possession of sanitary boards sufficient for the promotion of the prophylactic hygiene of communities,—*i.e.*, the suppression of the preventable causes of disease, this country takes the precedence of France, and probably of other Continental nations. The growing preponderance of physicians in the legislation of State and municipal governments has been remarked; this is especially seen in the constitution of our boards of health, which, as a rule, are presided over by a physician, and in the many really enlightened measures of sanitation which have emanated from medical men. Some writer has remarked that the world for many centuries witnessed the reign of the priest, that the nineteenth century has been the reign of the man of science, and the twentieth century will be the reign of the physician. Certain it is that the co-operation of physicians is becoming more and more necessary in all rational and efficient sanitary legislation.

I have thus far, it may be, emphasized too much the limitations of boards of health: these officials really possess all the power requisite for almost any conceivable occasion. They can enforce quarantine on all vessels coming from ports where a pestilential disease prevails, or they can prevent any

vessel from leaving the harbor of a town where a pestilential disease is raging. They can institute the most rigorous measures of prophylaxis and disinfection in a city or town where there has been an outbreak of a contagious disease. They can compel all physicians to report cases of contagious diseases occurring in their practice. They can shut up houses known to be foci of contagion, and establish pest-houses when required. They can close school-houses in infected districts, and, in the event of an epidemic of smallpox, they can compel all school children to be vaccinated under penalty of exclusion from school. They have a general supervision of cemeteries, and license undertakers. If any epidemic can be traced to a particular water-source, they can order the purification or suppression of the latter. They can prosecute, fine, or imprison a man known to have sold tainted or diseased meat. They have almost unlimited power in abating nuisances,—*i.e.*, objects prejudicial to the public health by offensive odors or the propagation of disease-germs. They may not be able to drain or otherwise purify a malarious marsh, from want of funds, but they can take the initiative in this direction by calling the attention of the municipal councils, and, it may be, the State board of health and the State Legislature to the evil, and insisting on its removal. So with regard to sewerage. Though boards of health may not of themselves institute a system of sewerage, they may, by appeals to the city government and by the dissemination of suitable documents, call public attention to the necessity of sewerage, and they may have a general superintendence of works designed for this end. Complaints of ill-ventilated or imperfectly-constructed sewers properly come before them. In short, there is nothing which directly or indirectly affects the health of the people, that does not come within their province. They may make by-laws which, as far as they do not conflict with the general statutes, are of equal authority with the ordinances enacted by the city council.

Such, in the essential features, is the constitution of our local boards of health. This system, with its checks and limitations, is, perhaps, the best that can be devised for the purpose. The presence of one or more medical men on the board is, without doubt, an element of strength, albeit the "chairman," appointed often by favoritism, is not always the best man for the place. The system has given good results, and it is hard to conceive how it could be much improved.

The functions of the State boards of health are of a more general character. They are not so limited in the expenditure of moneys, as they may draw on the State treasury to any reasonable extent. They constitute an advisory board to the municipal boards. To them belong elaborate and expensive investigations into the causes of disease in particular localities. This may be a large district, comprehending the territory of many local boards of health, infested, it may be, by malaria, and needing a costly system of drainage. Here the State board of health has the power and can command the funds to deal with the problem. They have a general superintendence of the sewerage of the cities of the State; may at any time make investigations when complaints are made; their approval of sewerage systems before their final adoption is generally required; where serious defects in any existing system of sewerage are shown, they can indicate the remedy. If any epidemic—of cholera infantum, diphtheria, typhoid fever, smallpox—is especially prevalent in a certain locality, they can co-operate with the local boards in endeavors towards the suppression of these diseases. The general supervision of the water-supply of cities comes within their jurisdiction. If any corporation, for instance, proposes to take water from a certain stream or lake, for the use of a particular town or city, the approval and permission of the State board of health must first be obtained. They can make investigations into the adulteration of food and drugs. They can insist that school-houses and other educational institutions shall be well ventilated, that the desks shall be after a certain pattern, that the surroundings of these schools shall be in a good sanitary condition; in this particular they have a joint responsibility with the local boards of health. They can shut all the ports of the State against the introduction, by vessels coming from foreign ports, of cholera, yellow fever, or any other grave pestilential disease; epidemics (like the epizootic) among cattle, horses, or swine equally come within their cognizance and jurisdiction. They can make it impossible for certain occupations attended with offensive emanations (like tanneries, gas-works, etc.) to be carried on within the precincts of a city. They may condemn a certain manufactory (as of wall-papers tinted with an arsenical pigment, clothing containing poisonous dyes) as prejudicial to the health of citizens, and doom it to

radical modification or extinction. In short, there is nothing pertaining to the air, water, food, drugs, beverages, or occupations of citizens which may not come under the supervision and jurisdiction of State boards of health, as well as of the local boards.

I may remark, finally, that in the late unparalleled disaster at Johnstown, Pa., the efficiency of the State Board of Health, acting in conjunction with delegates from many local boards and physicians from all parts of the State, under circumstances the most trying that can be imagined, in superintending and directing the removal of *débris*, the disposal of putrefying corpses, the thorough disinfection and purification of the locality, is creditable to our civilization.

The functions of the National Board of Health are still more general than those of the State, though similar in kind. If a pestilence should menace the whole country, or considerable portions of it, the national board would be a centre of organized effort for its suppression. Local boards of health, and even State boards, can only quarantine certain harbors; the national board can control the whole frontier of a nation, and the whole sea-coast, and establish a quarantine system on a large scale; if need be, shutting off for a time all foreign commerce. It might be deemed needful, in the event of an invasion of yellow fever, to close the Mississippi to all steamboat transit. It might be necessary, at great expense, to establish quarantine stations in the Gulf of Mexico, at the mouth of Chesapeake Bay, at the mouth of the Mississippi River. Sanitary measures of such magnitude could not be undertaken by State boards of health, but properly come under the province of the national board, with the almost unlimited funds at its disposal. A glance at the expenditures of this board for one year—from July 1, 1880, to June 30, 1881—shows that the considerable sum of two hundred and two thousand and sixty dollars was expended in the maintenance of quarantine and inspecting stations, in aid to State and local quarantines, for special investigations and sanitary surveys, for salaries and travelling expenses of members of the board, of inspectors, etc. The expenditures of another half year were more than a quarter of a million,—*i.e.*, two hundred and eighty-four thousand three hundred and thirty dollars.

The national board undoubtedly is doing a great deal to encourage special investigations upon the subjects of cholera, malaria, typhoid and typho-malarial fevers, diphtheria, and cerebro-spinal meningitis. It has done good work in the way of sanitary surveys of unhealthy localities, in the establishment of more effectual methods of collecting and reporting vital statistics, and in the collecting of information with regard to the sanitary condition of some of the principal cities and towns of the United States. The appointment of commissions to investigate yellow fever has not as yet been fruitful in any very positive results, yet it cannot be denied that in this direction is knowledge and progress.

Many of the investigations made under the auspices of the National Board of Health have been of exceeding value. I might specify the investigation of the flow of sewers in relation to their sizes and gradients, carried on under the direction of Colonel Waring, with a view to determining the most efficient and least expensive form of sewers. The board claims that the results of this investigation have already been of practical importance, since it was a presentation of the report to the committee charged with the sanitary survey of Memphis which led that committee to recommend a scheme for the sewerage of that city, which has made Memphis one of the cleanest and healthiest cities in the southwestern States.

Other subjects which come within the jurisdiction of this board are: the hygiene of the mercantile marine, and the legislation needed to improve its sanitary condition; investigations to ascertain the influence of various soils upon sanitation; investigations as to the influence of certain climates on certain diseases; investigations as to the prevalence of adulterations in food and drugs in the United States; and inquiries into the diseases of food-producing animals of the United States.

The National Board of Health consists of eleven members, appointed by the President. They meet semi-annually, and in the intervals of the meetings, the executive committee (consisting of five members) have power to act for the board.

N.B.—In a foot-note I have stated that my account of the organization, mode of appointment, and prerogatives of local boards of health is in accordance with existing arrangements in Massachusetts. This I believe to be the ideal system, and I believe that, despite some trifling variations from this plan in many other States, all similar organizations will eventually "come into line." In the essential principles all boards of health are alike.

I am well aware that in multitudes of small

towns there is as yet no properly-constituted health board. Yet, on the whole, the country is well provided with sanitary organizations; the members are wide-awake, earnest men, and there is hearty sympathy and co-operation between the local boards, the State boards, and the national board, which, when acting singly, are capable of producing results of far-reaching beneficence, and, when acting in concert, must command the wonder and admiration of the world.

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## *A CASE OF PETROLEUM-ETHER POISONING.*

By Joseph Leidy, Jr., M.D.* (Univ. of Penna.)

THE following interesting case of petroleum-ether poisoning was admitted to the University Hospital during the month of May, 1888:

M. P., æt. 19, strong, plethoric man, weight one hundred and eighty pounds, a worker at Point Breeze Oil-Works, had been ordered to cleanse a large oil-tank, the substance used being petroleum-ether, or benzine. He was found soon after lying upon the ground in an unconscious condition, in which state he was admitted to the University Hospital. From a fellow-workman I glean the following history: A new hand at the work, he had evidently used the substance in too large a quantity, for he was found soon after in the condition described, but, as his fellow-workmen thought, dead. Active means for resuscitation were resorted to, but with no avail. While a conveyance was being sought to remove him to his home, he was seen to move. In doubt as to his condition, they hurried him to the hospital, where I found him in the following condition: A man with a remarkable fine physique; unconscious; pulse strong and full, 60; respiration 14, very feeble, almost imperceptible; slight cyanosis; temperature 96.2° in the axilla; the body was cold; apparently but slight peripheral circulation in the extremities, arms, and legs, notably the nose and ears, which felt like ice; pupils widely dilated, and did not react to light; nystagmus, conjunctivæ barely sensitive to touch; paralysis of lower extremities, with incontinence of urine and fæces. The upper extremities resisted movements. Urine was tested and found normal, but with an ethereal odor. The driver of the patrol-wagon states he had a general convulsion (?) on his way to the hospital. Artificial respiration and friction, with mustard, of the body and extremities was immediately resorted to, and kept up for half an hour, when we were rewarded by the patient taking several deep inspirations voluntarily. We persisted in this course until we had further evidence of return of consciousness. In an hour and a half from the time of his admission he opened his eyes and spoke, complaining of severe frontal headache. This gradually disappeared towards morning, when he was feeling so much better that he insisted upon leaving the hospital, which he did that day, feeling, as he stated, "as well as ever."

Lewin (*Virchow's Arch.*, vol. cxii., April, 1888) has written an extremely interesting article upon the poisonous action of petroleum upon the animal organism, from its internal administration, and with especial reference to its local action upon the skin ("Ueber Allgemeine und Hautvergiftung durch Petroleum").

He succeeded in inducing a number of students to take the substance in a liquid form, and studied its action in varying quantities up to 300 c.c. He describes several varieties of its poisonous action, the principal of which are,—

1. The *gastro-intestinal* variety, including its action upon the kidneys.

2. Cerebral variety, with unpleasant after-effects.

During his stay in America, several years ago, he visited the principal oil-works, and studied its action upon the skin. Its action upon the stomach and intestines is that of a *gastro-intestinal* irritant. Upon the cerebrum its action is somewhat similar to that observed in the case just recorded, with the absence of after-effects. The intense *acne* which is produced upon the body exposed to the substance, both in a liquid form and as a vapor, is familiar to those having charge of dispensaries in the vicinity of large oil-works.

The above case is interesting, as showing the effect of the absorption through the lungs. It is a rare occurrence at the oil-works, and the writer is unable to find any reference to a similar case. The profound unconsciousness, paralysis, partial anæsthesia, and convulsions (?), with incontinence of fæces and urine, lead us to infer that it must have a direct action upon the cerebro-spinal axis. It is possible that the anæsthesia was complete

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when the patient was first discovered, as the distance from the works was fully two and a half miles.

The indications for treatment were simple,—to sustain the heart and respiration, which we did by artificial respiration and frictions, with the internal administration of coffee. Lewin suggests the use of apomorphine in those who have swallowed the drug in liquid form.

The symptoms in the above case compare favorably with those recorded by Lewin, with the following exceptions: In Lewin's cases no reference is made to its action upon the centres dominating urination and defecation. This may be explained from the fact that no case was so profoundly affected as this. The pulse was variable, irregular, slow, feeble, and small. In the above case, however, the pulse, though slow, was strong, full, and with high tension. The pupils did not react to light, which is in accord with the observations of Lewin, though Meyer (*Journal de la Société Méd. d'Anvers*, February, 1865) has noted, with the dilatation, normal reaction to light.

Petroleum-ether, or benzine, is a mixture of several organic compounds, which belong to the marsh-gas $CH_4$ series. It is rendered volatile at a temperature slightly above the bodily range. As petroleum-ether is a mixture and not a definite organic compound, the active factor in the mixture which gives rise to the above symptoms is not known. It is highly probable that each compound in itself plays a definite part in their production. Its great solvent property for fats and oils, in connection with its cheapness, make it particularly desirable for the purpose for which it is used.

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## *ON DIETETIC CURES.*

By Joseph Schmidt, M.D., Berlin, Germany.

As the gratifying result of gradual but palpable changes, the modern healing art no longer centres in the existence of an extensive chemico-pharmacal armamentarium, but in the light and the exhibition of simple hygienic principles. The old adage of the ounce of prevention has acquired the dignity of scientific doctrine. The modern therapeutist, besides, no longer treats the diseased organ but the diseased man, and he searches for remedial methods and not for remedial substances.

To induce a salutary modification in an affected organism, no more favorable point of aggression can be chosen than the digestive tract, and no more effective method can be exhibited than an appropriate and scientifically constructed diet. Frerichs, the celebrated German clinician, justly designated the dietetic treatment "one of the most important levers of the physician's technique." The tendency of the modern therapeutical school is to ever widen the sphere of applicability of the dietetic treatment of diseases, which includes, besides the diet as such, also certain other measures.

Of all morbid processes none is more suitable for a dietetic treatment than fever. The assumption that antipyretics, such as quinine, antipyrin, antifebrin, thallin, kairin, and others, can cure or, at least, favorably influence the febrile process, is to-day held by but few practitioners. Fever may by antipyresis be suppressed for a certain length of time, but it cannot be eliminated as long as its causes continue. Indeed, some clinicians, like Nothnagel and Naunyn, claim that the microbic causes of fever perish in the high temperature of the fever, and that it would, consequently, be imprudent to attempt the destruction of the bridge nature has built for its return to health. If the cause of the fever is unknown, or cannot, if known, be removed, fever can rationally be treated only by dietetic measures. The advocates of this treatment, however, are divided in two groups holding opposing views in this connection. The representatives of one group put the fever patient on a hunger diet, believing that any supply of victuals causes an increase of the fever, in the same manner as, for instance, a fire would be nurtured by the addition of oil. The view of the other group is that the supply of victuals is to be permitted within certain limits in order to make up for the increased tissue-changes produced by the fever. Professor Jürgensen, the chief advocate of this view, justly asks the following question: "If we are compelled to keep up a fire in our room, would it be better to buy wood or to throw the chairs of the room into the fire?" This clinician regards it as an economical mistake to sacrifice to the avidity of the fever the tissues of the body, instead of protecting the organism by substitution of foreign materials. The latter view is becoming daily more popular. The best results have in many instances been obtained by giving the fever patients a good supply of strengthening food. The most important food for a fever patient is

water, which, pure, or with addition of acids or milk, or in the form of rice-water or gruel, ought to be given every half-hour. In greater intervals, to represent, as it were, the principal meals, a mixed diet is to be exhibited. Bouillon with egg, milk, stewed fruit, a little broiled steak, and the broth prepared from calves' feet (rich in glue-like substances) are recommendable. The important *rôle* of alcohol in the treatment of fever has long been known. This agent is of undoubted value in fever by its capacity to lower the temperature and to protect the tissues. Still, alcohol is to be used with caution, for, as Professor Stillé said, it did harm if it did not do good. Strict individualization regarding its use, therefore, is indicated.

The great therapeutic value of a dietetic treatment is well illustrated by the success of the Weir Mitchell treatment in certain forms of nervous affections, particularly in hysteria and in advanced nervousness. It must be gratifying for the American profession to learn that the Weir Mitchell treatment is as familiar to the physicians of Europe as to the American practitioners. The theory of Mitchell, that the cause of the nervous affections mentioned is chiefly a deterioration of the blood produced by its deficiency in fatty matters, indicates sufficiently the dietetic measures needed. If the disordered organism could be made to take up greater quantities of fat, and the quality of the blood be thus improved, the condition of the patient could, according to the Mitchell theory, be materially changed for the better. This desideratum, however, could not be obtained merely by an abundant supply of victuals, as the weakened organism would be unable to digest such a supply. But, in combination with absolute rest, massage, and electricity, the object aimed at is often readily attained. Other important factors in the Mitchell treatment are, as every physician knows, removal from the habitual surroundings, permanent rest in bed, and a systematic supply of nutritious victuals, chiefly of milk. Half a pint of milk is taken *pro die* in the beginning, and within a few days this quantity is increased until two to three pints are given as the daily ration. As additional victuals, the patient receives soft-boiled eggs, rolls with butter, broiled steak, a few vegetables, farinaceous dishes, and roasted potatoes in fixed quantities and definite intervals. In order to facilitate the digestion of the exhibited food, the muscles of the body are treated twice a day by electricity and massage. An increase of the bodily weight and general improvement of the patient's condition is soon noted, provided the cases have been carefully selected for this treatment.

An almost diametrically opposite dietetic treatment is employed in cases of lipomatosus and plethora. Among the best-known forms of what might be termed the deprivation cures is the so-called Schroth's "trockenkur" (dry cure). The principle of Schroth's cure is to deprive the system of water (and partly also of solid constituents) by getting the patient to abstain from water as much as possible. The diet allowed by Schroth consists chiefly of dry rolls (two to three days old), gruel, and a little wine. This method, however, has been found to be not altogether free from injurious after-effects, and is to-day but little used in its unmodified form.

Similar has been the fate of the once celebrated Banting cure, which the English physician Harvey once ordered for Banting, who turned the scales at two hundred and two pounds. The Banting cure proscribes all fatty and solid foods in general, besides chocolate, cacao, and stronger alcoholic beverages. The bill of fare, particularly as modified by Vogel, is very simple, and contains coffee, tea without milk or sugar, toast, soft-boiled eggs, lean raw ham, thin bouillon, lean meat, some few green vegetables, potatoes, and a little light wine. This treatment has in many cases been successful, though it is based on false physiological principles,—viz., that fat, as was taught by Liebig, was formed from fats and carbohydrates. In numerous instances, however, the patient became so emaciated that the cure had to be interrupted. As, besides, psychical disturbances and even consumption have occasionally followed this treatment, it is to-day but rarely resorted to.

The failures of both the Schroth and the Banting cures led Professor Ebstein, of Göttingen, to propose a new dietetic cure on a wholly different basis. The Ebstein cure was based on the doctrine of Professor von Voit, that fat was formed chiefly by albuminous food-stuffs, particularly if supplied in conjunction with carbohydrates. Voit taught, besides, that fatty substances had not only no influence whatever on the formation of fat, but, on the contrary, prevented lipomatosus and plethora by producing the sensation of satiation and lowering, consequently, the want of food. Ebstein ordered carbohydrates, such as bread and vegetables to

a limited extent, and allowed all kinds of meats, even fatty ones, butter, and fatty gravies. He interdicted potatoes and sweet substances. But it did not last long before the physiological views, which formed the basis of the Ebstein cure, were attacked and discarded, and the Ebstein cure suffered the fate of its predecessors, the Schroth and Banting cures.

Another new method soon made its appearance, which, by its thoroughly scientific basis and practical general nature, at once eclipsed all previous dietetic cures. The merit of having worked out by laborious scientific researches and numerous practical trials the new dietetic cure belongs to Professor Oertel, of Munich, though it is popularly known as the Schweninger cure. This misnomer arose from the fact that Dr. Schweninger, at that time a practitioner in Southern Germany, cured Prince Bismarck from his obesity by this method, in acknowledgment of which he was appointed a professor in the University of Berlin, against the unanimous vote of the faculty. The Oertel method is suitable for cases of lipomatosus, particularly if combined with a depressed cardiac power, resulting from fatty infiltration of the heart; besides, in such cases as result from high living. The main principle of the Oertel treatment is to deprive the body of as much water as possible, and to attain at the same time a strengthening of the heart-muscle. The regulation of the fluid constituents of the body Oertel secures both by reduction of the supply of liquids and by the increase of the secretion of liquids. The ingestion of liquids is reduced in this treatment to a minimum. Oertel says the sensation of thirst is but the result of the former habit of drinking, and can be suppressed by mere gargling. The increase of secretion of liquids Oertel induces by the perspiration subsequent to physical exercises and to the application of dry heat (steam-baths). The food allowed by Oertel consists chiefly of albuminates (eggs and lean meats), which cause a diminution of the stored-up fatty deposits of the system. The principal factor, however, to attain the last-named object are such physical exercises as tend at the same time to strengthen the heart-muscle. These exercises consist in daily and continued mounting of elevations, persisted in until palpitation of the heart sets in, and resumed again when the palpitation has disappeared. Exhaustion, to be sure, is to be carefully avoided. Oertel has worked out his method into the minutest details, and exacts a strict observation of them. His success has in the majority of cases been extraordinary.

It will, in conclusion, not be amiss to briefly mention some other dietetic cures which formerly enjoyed, particularly in Germany, great popularity, but have of late, perhaps without justification, been neglected. Particular mention deserves first the old-fashioned milk-cure, which was in the past held in high repute in pulmonary, renal, and principally in cardiac affections. Almost equal popularity in the stated affections was enjoyed by the whey-cure, though many physicians have denied the therapeutic worth of this cure altogether. Grape-cures are still popular in Germany in conditions of general plethora, hemorrhoids, and similar disorders. The koumiss-cure, which is of a rather recent date, has given excellent results in cases of consumption, chronic intestinal catarrhs, scrofulosis, and anæmia, Koumiss, or wine-milk, is the milk of the Russian mare of the steppe, in a state of alcoholic fermentation. It is prepared by mixing a bottle of koumiss with ten bottles of fresh mare's milk, beating the mixture with a rod, and putting the liquid into well-corked bottles, which are to be stored away in an ice-cellar or ice-box. A prolonged use of koumiss favors the deposit of fat in the body.

The latest acquisition in the line of dietetic cures is the kefir-cure. Kefir, like koumiss, is a product of fermentation of milk, and is prepared from cow's milk by addition of a special ferment,—the kefir-corn. This ferment, a mixture of alcoholic yeast and bacilli, is placed into ordinary milk, which causes their swelling up. The mixture is then put into well-corked bottles and stored away. It is, however, necessary to shake the bottles well up at certain intervals. After a few days the kefir is ready for use. It is a strongly effervescent, cream-like drink, of a sour taste. It is as yet impossible to say whether kefir in reality possesses the high therapeutic value which is claimed for it. Kefir is, in Germany at least, becoming a very popular remedy, and is for sale not only in all drug stores, but also in very many grocery stores. Its cheapness,—about five cents for a large bottle,—of course, is a recommendation of the remedy to the poorer classes of the people.

It is an undeniable fact that the dietetic method of treating diseases is gradually getting a firm hold on both the profession and the great public.

## *CASE OF POISONING BY JAPANESE LACQUER.*

## *CASE OF POISONING BY ADMINISTRATION OF HOMŒOPATHIC PELLETS LABELLED "RHUS."*

## *CASE OF POISONING BY THE CASHEW-NUT,—ANACARDIUM OCCIDENTALE.*

By D. W. Prentiss, M.D., Washington, D.C.*

*Case of Poisoning by Japanese Lacquer—the Sap of the Rhus Vernicifera.*—March 20, 1889, I was called to see Mr. H., who sent word he was poisoned by Japanese lacquer. Not knowing what Japanese lacquer was, I responded promptly, and found Mr. H. suffering greatly from a vesicular inflammation of the face, ears, neck, hands, and scrotum, having exactly the appearance of poisoning by *Rhus toxicodendron*. The eyes were nearly closed and the itching intense. He informed me of the nature of the poison and how he came by it, remarking that he did not suppose anything could be done for it, but that I would probably be interested to see the case, that it was of very frequent occurrence in Japan, and that the natives allowed it to run its course. Mr. H. spent several years in Japan as instructor in natural history, in this way becoming perfectly familiar with lacquer, its uses and its accidents. It is to be remarked that he considered himself entirely insusceptible to the poison of the rhus, never having been affected in this country, though repeatedly exposed, had often handled the vine, and supposed he could not be influenced by it. He visited the lacquer-factories in Japan, and studied their methods of work with impunity.

The Japanese themselves very much dread the poison, and Mr. H. says he had trouble to get any of his students to accompany him as "interpreters" to the places of manufacture. Those who are subject to the poison suffer precisely as patients afflicted by the rhus or poison ivy. Of course, those engaged in the lacquer work are not affected by it, but whether one acquires immunity after a time I am unable to tell. However, if the poison is a volatile acid, as Rein supposes, it would seem possible to remove it by a heat that would leave the lacquer uninjured, and thus make it available for use in this country.†

The manner in which the poisoning occurred in this case was as follows: Mr. H., in pursuance of his studies at the National Museum, in Washington, D.C., opened a bottle of lacquer which had been in the museum for years. There was a feeling as of a warm breath over the face, and a suffocating, disagreeable odor, which he could not liken to any known odor. It was neither musty nor pungent, but very unpleasant.

The irritation of the hands and face came on gradually for three days, when it was as described above, and confined him to the house. He was ordered a liniment of

℞ Acidi carbolici, 1;
Ol. lini,
Aq. calcis, aa 50.

To apply constantly over the inflamed surfaces, and in addition a ten per cent. solution of carbolic acid to be applied over any intensely itching part.

He was sceptical of getting any relief, and had made up his mind to stand it until it ran its course.

When I called the next day he expressed himself as much delighted at the effect of the application, as it had almost entirely relieved the distress.

Subsequently the case ran the usual course of rhus-poisoning to recovery in ten days.

There was no irritation of the mucous membranes of the nose, mouth, or air-passages, as might have been expected from the inhalation of the poison.

The treatment here prescribed I have used in a number of cases of rhus-poisoning with the best results, more than once in my own person.

I always provide my family with a supply when they go to the country for the summer. It is useful not only for the purpose mentioned but is also an excellent liniment for burns, erysipelas, bee-stings, and bites of insects.

In the article on Japanese lacquer by Mr. Romyn Hitchcock—which I have just quoted—is an interesting account of the whole process by which the lacquer-ware is made, and also a chemical analysis of the juice.

"The tree—*Rhus vernicifera*—grows throughout the main island of Japan, and attains a large size, the trunks sometimes measuring a metre in diameter. It is said the tree will live for forty years, but only comparatively young trees are valued for the production of lacquer. The lacquer exudes from horizontal cuts in the bark in the form of a rather viscid emulsion, and may be col-

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† "Preparation of Japanese Lacquer and the Manufacture of Wakasa Lacquer-Ware." By Romyn Hitchcock.—*Proceedings U. S. Nat. Mus.*, vol. xi.

lected from April to the end of October. It never flows so freely that it can be collected in vessels, but must be taken up by a kind of pointed spoon and transferred to a wooden receptacle or bamboo tubes. The utmost yield of a tree is forty or fifty cubic centimetres. As the sap first exudes it is grayish white, but quickly turns yellow, and afterwards black, from contact with the air. The sap thus collected is *ki-urushi*, *urushi* being the general name for lacquer."

A full description of the processes of manufacture of the different kinds of lacquer is given, how the articles are colored, decorated, and polished, and in the National Museum at Washington may be found a complete series of manufactured articles, illustrating all the steps of the process.

Of more immediate interest, however, to the medical profession are the studies into the chemical composition.

It contains *urushic acid* ($C_{14}H_{18}O_2$), a volatile acid, and a peculiar albuminoid. This latter is the essential element in causing the hardening and producing the results which make the lacquer valuable. It is the volatile acid which produces the poisonous effects.

Professor Hitchcock closes his valuable paper with the remark "that the peculiar qualities of lacquer make it seem worthy of more consideration than it has received in this country. It gives a surface to wood much harder than our best copal varnish, without brittleness. It takes a polish not to be excelled, which lasts for centuries, as we may see in the old treasures of Japan. It is proof against boiling-water, alcohol, and, indeed, seems to be insoluble in every agent known. It is the best possible application for laboratory tables."

"A very serious objection to the use of lacquer in this country is the danger of lacquer-poisoning from the fresh material. I have recently heard of a pianomaker who tried to use it, but it affected his workmen so seriously that he was obliged to give it up" (*loc. cit.*).

A case also has come to my knowledge of a naval officer in Japan who was sick, confined to his bed for a long time, and the naval surgeons were at a loss to understand the nature of the disorder. Finally, they called in a native Japanese doctor. He immediately pronounced it a case of lacquer-poisoning, and ascribed it to a newly-made screen around the bed. The screen was removed, and the patient promptly recovered.

Professor Hitchcock informs me that cases of lacquer-poisoning are not uncommon from using household articles that are freshly made.

*Case of Rhus-Poisoning from Homœopathic Rhus Pellets.*—A couple of years ago, while visiting a patient, I was asked to see a lady in the house, who had been sick for several months with an eruption, under the care of a homœopathic physician. The physician had become discouraged, and given up the case. When I saw this patient I was struck with the resemblance of the eruption to that of "poison ivy," and questioned her as to possible exposure. But she had not been out of her room for months. While making the inquiry I noticed a homœopathic vial on the table labelled "rhus." I asked if she had been taking the pellets, and she said she had "all the time." They were discontinued and put out of the way, and the patient shortly recovered. There seemed no doubt that the *rhus* pellets had caused the eruption.

*Case of Poisoning by the Cashew-Nut,—Anacardium Occidentale.*—In 1881 a gentleman connected with the United States National Museum, while organizing the materia medica collection, came across some nuts unlabelled. He sawed one of them through to make a specimen, and got some of the tar-like substance between the shell and kernel on his hands. A few days after the face and hands became violently inflamed, a vesicular eruption accompanying the inflammation and intense itching. The face was of deep orange color; eyes closed by swelling. The inflammation extended to the edge of the hair, but not to the scalp.

He was confined to the house for a week, suffering most from the intolerable itching. In ten days he recovered, the skin desquamating from the parts affected.

The nuts were afterwards identified as "Cashew-nuts," from the *Anacardium occidentale.*

Treatment of the case not stated.

The affection corresponded exactly with rhus-poisoning.

There are two species of the Cashew-nut,—*Anacardium occidentale* and *A. orientale*,—natives of India and China. The fruit is edible. The nut grows in a curious way upon the outside of the fruit at its distal extremity, and is about the size of a small hickory-nut. Between the outer shell and kernel is a pulp containing a black, tarry juice, of an actively irritating nature. This juice makes an indelible stain upon fabrics, and the tree in

consequence is popularly called the "marking-nut tree."

It is said to be used also by the natives as a vesicant, and applied to the floors to destroy or drive out ants.

Dr. Newton, in the Pharmacopœia of India, says the native women use the juice to produce abortion, applying it to the *os uteri*.

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## *ON THE NECESSITY AND IMPORTANCE OF EARLY TREATMENT OF THE DISEASES OF THE NOSTRILS, PHARYNX, AND EUSTACHIAN TUBES IN CERTAIN FORMS OF DEAFNESS.*

By Laurence Turnbull, M.D., Ph.G.*

*Rhinitis or Catarrh.*—At the present day there is a disposition to magnify all discharges from the nose as nasal catarrh, and if from the throat, post-nasal, or from the ear, middle-ear catarrh. Even when there is little or no inflammation, only a discharge of fluid, it still receives a name which the laity dread, not understanding its nature, and out of which some medical men make much capital, working on their credulity. Now, what should be clearly understood by a catarrh, a flow of serum from a "cold," or sudden check of the action of the skin of the body? It is a superficial inflammation of the mucous follicles of the nose, throat, or Eustachian tubes. This is an affection which is sometimes epidemic, but usually of little consequence, every one having it in the course of the winter or spring. This form can generally be checked by a pill, of pulv. ipecac. et opii, at night, spraying the nose with a two per cent. solution of hydrochlorate of cocaine, directed by the physician, and applied to the nose by the patient, followed by a few grains of quinine or cinchonidia internally.

Should the throat be dry or inflamed, 2 drops of tincture of aconite every hour, and 3 drops of tincture of belladonna, or $\frac{1}{150}$ of a grain of atropine sulphate, taken at bed-time, with foot-bath, an antiphlogistic regimen, remaining in the house for a day or two. Recovery takes place usually in the course of a few days, a week, or, at most, ten days. The parts are a little sensitive to cold air after an attack, and may require a mild powder blown into the nose, mixing subnitrate of bismuth, morphine, or opium, with powdered gum arabic. This will dry up the secretions, cover the parts, and protect the sensitive membrane.

Should these attacks become frequent in adults and children, the mucus becoming dry, "hawking" occurs. This should be avoided, for the mucus, which should be softened and discharged from the nose by careful blowing, is drawn backward into the throat and the Eustachian tubes, which "hawking" is a most pernicious habit.

*Causation.*—From a neglected and non-treated cold or coryza, frequently repeated, from exposure and want of sanitary environment, improper covering for the head or feet, throat or chest, hereditary tendency to catarrh, the abuse of tobacco, atmosphere charged with dust,—from these various causes there arises a chronic inflammation of the nose and adjoining organs. The three varieties are,—1, simple chronic rhinitis (or chronic catarrh); 2, hypertrophic rhinitis, hypertrophic catarrh; 3, atrophic fetid rhinitis (or ozæna). Now, the word rhinitis, which is employed, gives us at once a correct name for the disease,—inflammation of the nose. This may extend to the pharynx (chronic pharyngitis), Eustachian tubes, and middle ear, and even into the throat, causing chronic laryngitis.

There is still another form, antritis (Daily) (or catarrh of naso-antrum), with symptoms of pain about the eye, with purulent discharge from the nostrils; this is noticeable in the patient by a free flow of mucopus into the throat on lying down on the side affected. In two cases under my care the treatment was through the second bicuspid tooth, which had been extracted, and the antral cavity treated with antiseptic solutions.

*Simple Chronic Rhinitis.*—The most usual form that is met with is simple chronic rhinitis,—a chronic inflammation of the nasal mucous membrane, attended with swelling, stuffing, and a discharge of mucus, and at times pus and blood. This is especially the case if the nose is blown with great force. By an anterior rhinoscopic examination, by means of a retaining nose speculum and a good head mirror, there will be shown a congestion of the mucous membrane, and swelling of the irregular spaces covering the middle and inferior turbinated bones and a portion of the septum. According to Mackenzie, of Baltimore, "Under the influence of *ab extra* irritation, or the result of psychical impres-

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sions, erection of this tissue takes place, the dilatation of its cells being in all probability under the direct dominion of the vaso-motor nerves derived from the spheno-palatine ganglion. It is the temporary orgasm of these bodies that constitutes the anatomical explanation of the stoppage of the nostrils in acute coryza (or rhinitis), and their permanent enlargement is the distinctive feature of hypertrophic nasal catarrh (or hypertrophic rhinitis). This erectile area is, moreover, as has been elsewhere shown,* especially concerned in the evolution of the many curious reflex phenomena which are observed in connection with nasal and aural affections. Indeed, the changes which it undergoes seem to lie at the foundation of nasal and aural pathology, and furnish the key-note to the correct interpretation of their disease, and also to many obscure affections in the remote organs of the body."

The second variety is termed hypertrophic rhinitis (or, improperly, hypertrophic nasal catarrh) : this, from its long continuance and true chronic character, produces a true hypertrophy. The larger portion of the mucous membrane of the posterior portion of the nasal passages and lower turbinated bones are thickened, the glands of the vault of the pharynx become swollen, enlarged, and relaxed, and the secretions from them and those of the mucous membrane are excessively thick and tenacious. The patient is oppressed and breathes with difficulty, the voice being nasal, with deafness.

The third variety is termed atrophic rhinitis (atrophic catarrh, or ozæna). This third variety is almost always accompanied by a disagreeable odor, and a diminution, more or less, of the sense of smell and taste on the part of the patient. The rhinoscopic examination of the nasal fossæ will show an extreme thinning of the pituitary membrane, with atrophy of the turbinated bones. In consequence of the diminution of the inferior turbinated bone at times, the opening of the Eustachian tube filled with a discharge can be seen through the nostrils, causing at times deafness. The atrophied mucous membrane takes on coat after coat of solid and obstinately adhering crusts, which give off the characteristic fetor.

*Prophylaxis.*—The general health of persons affected by these three varieties of disease of the nose, throat, ears, and adjoining cavities, is more or less affected, depending on the degree of the affection, or whether it be associated or complicated by various constitutional diseases, as scrofula, syphilis, tuberculosis, or other hereditary vices, with the "neurotic factors."

*Prophylactic Treatment.*—Placing the patient in a good healthy climate,† well fed, frequent bathing, frictions, massage, etc., attention to clothing, and by treating the various affections with mercury, the iodides, and the active principle of cod-liver oil, with counter-irritants to the spine, if tender and sensitive.

*Treatment of Simple Chronic Rhinitis.*—First, cleanliness; washing out the nose with hot water containing a few grains of biborate of sodium, and then carefully blowing into a handkerchief; no hawking or the use of strong saline solutions under high pressure, nor irritating powders, which in themselves cause the disease to become permanent. Milk-warm fluids should be applied in the form of coarse or fine spray, and should be kept warm. This treatment, with a few doses of Dover's powder at bedtime, and from 2 to 3 grains of quinine every hour, in the form of a compressed pill, until eight to ten grains have been taken, will usually cure the case. Should the case become more obstinate, and these measures fail, various cleansing and disinfecting solutions are employed with the nasal-spray apparatus or the posterior nasal syringe, but the basis of all washes is a mild alkali and carbolic acid. The following is one of those solutions recommended by Lefferts, of New York:

℞ Acidi carbolici, ℈i;
Sodii boratis, ʒi;
Sodii bicarbonatis, ʒi;
F. glycerin, ℥i;
Aquæ rosæ, ℥i;
Aquæ, ad Oi. M.

This second is Dr. Seiler's, of Philadelphia, a more elaborate prescription, containing the following ingredients:

* *Am Jour. Med. Sci.*, July, 1883, p. 106.

† 1. The climate must be such as to insure *pure air, free from dust and other poisonous germs.*

2. Such air is more apt to be found at an elevation of one thousand feet or more above the sea-level.

3. There should be an equable temperature, neither too warm nor too cold; the air should be in continuous motion, and yet there should be no wind-storms.

4. There should be plenty of sunshine.

5. The landscape should be pleasing.

6. The health resort should be easily accessible, and home comforts with congenial society easily obtained.

7. The patient should be able to take almost daily outdoor exercise without fatigue.

℞ Sodii bicarb.,
Sodii bibor., āā ʒviii;
Sodii benzoat.,
Sodii salicylat., āā gr. xx;
Eucalyptol,
Thymol, āā gr. x;
Menthol, gr. v;
Ol. gaultheriæ, gtt. vi;
Glycerin., ℥viiiss;
Alcoholis, ℥ii;
Aquæ, q. s. Oxvi.

This formula gives a solution which is sufficiently alkaline to dissolve the thickened secretion adhering to the nasal mucous membrane, and, as it is of proper density, it is bland and unirritating, leaving a pleasant feeling in the nose. At the same time, it is antiseptic and acts as a deodorizer, being considered in this respect far superior to Dobell's solution.

The following modified form of Dobell's has been used with great satisfaction:

℞ Acidi carbolici, gr. iv;
Sodii borat.,
Sodii carbonat., āā gr. xx;
Liquor. opii sedativæ, ʒss;
Glycerin., f℥i;
Aquæ destillat., ad f℥iv. M.
Filter, and use in atomizer morning and night.

In addition to the above, we use the following: f℥i vini picis, as employed at Jefferson College Aural Clinic. After the cleansing mixture use a two-per-cent. solution of antipyrin, and apply hot to the parts. This solution possesses hæmostatic properties, and gives relief to occlusion from the irritable condition of the turbinated bones. It has the advantage over cocaine, in not producing complete local anæsthesia, nor any tendency towards a habit. It has one objection,—it produces a smarting sensation. Combined with cocaine, it increases the local action of the latter, enabling it to be used in a weaker solution. In the more aggravated form of hypertrophic rhinitis, after the treatment by means of the post-nasal syringe or by mopping with various disinfecting solutions, applied warm, and when these foreign materials have been removed, applications of astringents are then employed to give tone to the parts, such as tannin and camphor, boro-glyceride, iodine, and glycerin, solutions of sulphate of zinc, nitrate of silver, powders of iodol, and iodoform with boracic acid. Again, by means of the ring-knife, covered knife of Daily, or the forceps of Menière and others, permanent hypertrophic enlargements, adenoid growths, and faucial tonsils, with enlarged foreign growths, can be punctured or incised or removed. To determine between positive or permanent growths, spasmodic or temporary ones, arising from actual deposits of foreign material, the parts should be painted with a two- to four-per-cent. solution of cocaine, which will cause the spasmodic enlargement to disappear, but will not affect the permanent. These operations are to be accomplished with great care, especially if the patient is suffering from an affection of the ear, as we have found the actual or galvanic cautery applied in the vicinity of the ear to cause inflammation of the Eustachian tube with acute otitis media followed by perforation of the drum membrane. Even when blood accidentally passes into the Eustachian tube from an operation, and impinges on the membrana tympani, it will sometimes act as a foreign body and produce perforation. In the use of an anæsthetic, it is never safe to employ a systemic one, such as ether or chloroform. It is best to use a local one, like cocaine or antipyrin, or a combination of the two; but it is not safe to employ a solution in spray stronger than from two to four per cent., and now and then to localize the point to be operated upon, and use vaseline, or a powder of starch and cocaine, applied right to the spot.

*Atrophic Rhinitis or Ozæna.—Treatment.*—Cleansing the parts, and the use of the spray, both coarse and fine, with a solution of bichloride of mercury, 1 part to 9000 or 10,000, in hot water, with a small portion of cocaine and morphine in solution to relieve pain. After the spray employ absorbent cotton daily, cleansing the parts, using insufflations of impalpable boric-acid powder, with a minute portion of iodol, subiodide of bismuth (in syphilitic cases); iodoform, with antipyrin, should there be ulceration. In some instances Politzer's plan* should be followed. My treatment, in non-syphilitic cases, is nitrate of silver, 1 part to 10 of water, applied on cotton by forceps well into the back part of the nostril and pharynx, wiping around the outside of the nostril, to prevent discoloration, with a solution of caustic potash. I cleanse the parts with a solution of boracic acid before the application of the silver, which I apply once a day, while with the spray the patient cleanses the nostrils twice a day, using the spray warm, for three weeks, with the following powder dissolved in water:

* See Turnbull's "Defective Hearing." J. B. Lippincott Company, Philadelphia.

℞ Potassii bicarb., chlorate, and salicylate, of each four parts, to one pint of hot water.

The following three cases from my note-book will serve as illustrations:

CASE I.—*Obstruction of the Eustachian Canal.*—This occurs in rhinitis or subacute catarrh of the middle ear from thickening of the mucous membrane, also from spasmodic swelling of the parts, or a combination of both conditions. The following case will illustrate the above: M. H. D., aged 35, a school-teacher, a spare, delicate, bilious man,—such, by the way, being the most difficult cases of deafness to treat successfully, from the noises peculiar to a school, or the constant disturbance of temper, or the impure sanitary condition of the atmosphere,—such, as a rule, are almost always much depressed in regard to their condition. The case referred to, being similarly affected, having but one moderately good ear on which he depended, finally lost the hearing of this ear by chronic inflammation of the mucous membrane with thickening, but just at the time he appeared at the clinic at Jefferson College there had been an entire closure from spasm. My assistant had endeavored to open the pharyngeal orifice by means of Politzer's air douche, but had failed. I attempted to introduce the Eustachian catheter, but was met by a distinct wall of elevated tissue, and was unable to pass the obstruction. I applied a four-per-cent. solution of hydrochlorate of cocaine, warm, through the nose to the naso-pharyngeal cavity, also introducing a few drops into the catheter, charging my Politzer bag with from ten to fifteen drops of ether, which is an antidote to the injurious effects of cocaine. I also charged the catheter by dipping it into the solution, which allowed the vapor to enter into the middle ear with ease, and relieved the patient without giving him pain, much to his delight.

Now, in chronic thickening of the middle ear I use ether, with or without iodine, or, as a sedative, bromide of ethyl. My method of applying it is by means of Politzer's bag. I drop 8 to 10 drops of the ether alone or combined into the bag. The patient takes some water in his mouth and holds it there. A nose-piece is put in his nose, and, just as he is swallowing the water, I squeeze the ether-vapor through the nose-piece into the passages. I have had a very large experience in the use of this combination in these cases. I find that ether, alone or combined, is the very best application, for the following reasons: 1. Ether is very highly stimulating. 2. It is a powerful anodyne, when combined with bromide of ethyl, particularly in cases where tinnitus aurium is a symptom.

CASE II.—*Ear-Disease complicated with Swollen Erectile Tissue in the Nose, depending in Part on Uterine Irritation.*—Miss M. H. suffers from middle-ear deafness, and also from disease of the nervous and uterine apparatus, employing most of the time Seiler's tablets with the spray, also iodine and glycerin into the nostrils. While watching a fire in her neighborhood, under great mental excitement, with her head out of the window during the night, and very cold, she contracted a severe rhinitis, followed by a profuse watery discharge. She was relieved of acute symptoms by the use of pulv. Doverii at bed-time, and through the day aconite and belladonna, and pills of bromide of quinine. Then followed cough and copious expectorations of yellow pus, the nostrils being completely filled up. The condition was relieved by a spray of antipyrin (a two- to four-per-cent. solution), and the deafness by opening the Eustachian tube. The following prescription was then given:

℞ Morphinæ acetat., gr. i;
Spts. vin. rect., ʒi;
Syr. aurantii rub., ʒi;
Aquæ, ʒi. M.
Sig.—A teaspoonful at 7 and 10 P.M.

This afforded entire relief.

CASE III.—*Throat and Ear Case. Great Improvement by combining the Treatment.*—There are numerous cases of throat affections, enlarged tonsils, and naso-pharyngeal disease which have no apparent influence upon the hearing; yet, on the other hand, the nose and throat are at times the chief cause, by closing the Eustachian tubes, of preventing ventilation of the middle ear; or severe inflammation is propagated through the tube into the middle ear, filling it with pus, mucus, serum, or blood. These cases, if attended to early, are promptly relieved, but if they become chronic and require protracted operations, the deafness, owing to the organic changes, can be but rarely relieved. The operation itself is a cause of perforation of the drum-membrane, or involvement of the mastoid cells, cicatricial formations, or a severe otitis media purulenta.

Three or four such cases have been operated upon during the months of January and February by the most celebrated laryngol-

ogists of this city, with little or no improvement as to the deafness. The case we are about to relate is an exception.

E. G., aged 15, from the interior of Pennsylvania was sent to me in January, 1889, by his physician, who had been treating him for deafness of both ears, but especially the right. The lad had a dull, stupid look, with swollen nose and lip. His hearing on the left was four $\frac{4}{12}$ feet, and his right was only $\frac{6}{12}$ $\frac{\text{inches}}{\text{feet}}$, watch. On examination, it was found that he had a very large anterior hypertrophy on both sides, enlarged tonsils, and a very large pharyngeal tonsil, which filled very nearly the entire naso-pharyngeal space. The whole mucous membrane was inflamed, irritable, and covered with mucus of a gray, stringy nature. His physician was directed to employ for three weeks a wash of an antiseptic solution (alkaline) by a spray, applied by the doctor every day, and to place the boy upon tonics of iron, cod-liver oil, and alteratives of iodine, ammonia chlorides, etc. He came back in the course of a month, when his expression had entirely changed,—his eyes were bright, and he had a smile on his face, his nose was smaller, and he was able to breathe with ease, without contracting his nose. Above all, his hearing had improved in the right ear to twenty feet, and in the left to ten inches. The membrana tympani, which had been sunken and inflamed, had resumed a better curve, and the air entered the middle ear which was freer from mucus.

After a number of operations, with the use of Politzer's air-bag, charged with from ten to fifteen drops of ether, his hearing was again tested on March 7, when the following was the result: Right ear, $\frac{2}{12}$ feet; left ear, ten feet, $\frac{10}{12}$ feet. He was directed to still continue the wash and tonics until mild weather, and to return, if not entirely well, in three weeks, to give full time for the operated parts to heal and the parts to resume their normal condition.

In many instances we do not receive all the benefit from operations in these regions, owing to our not giving full time for the first class of operations to heal before attempting another series. This is sometimes the fault of the patient, in his great anxiety to get well and return home before the surgeon considers it advisable.

Often mischief follows the, too soon, exposure to cold air in the railroad-car, or a sudden change of temperature and its action upon the exposed and sensitive membrane.

## *THE USES AND ABUSES OF THE NEW ANTIPYRETICS.*

By B. Frank Humphreys, M.D., Hawkins, Tex.

THIS subject has been discussed exhaustively through the columns of various medical journals, and in none, perhaps, more carefully and thoroughly than in the Therapeutic Gazette, which so ably leads the procession in the grand march of therapeutic progress. It may, therefore, seem not only unnecessary, but possibly a little presumptuous in the writer, to attempt the further discussion of this topic, which has been an interesting thesis, from time to time, of the most renowned clinicians known to fame. Nevertheless, I will venture to offer some additional remarks and collaborations, chiefly in relation to antifebrin, phenacetin, and antipyrin.

My experience with antifebrin is rather too limited and indefinite to inspire me with that confidence necessary to justify any positive conclusions with reference to the therapy of this drug. Its untoward effects on the hæmoglobin of the blood, like most of the aniline products, if long continued in large doses, result in organic changes by decomposition of the coloring-matter of the blood, as noted by Professor Germain Sée, who says he dislikes to use it much on that account, and remarks that his illustrious *confrère*, Dujardin-Beaumetz, goes on giving antifebrin regardless of the cyanosis produced thereby, and when the distinguished savant of the Paris faculty is thus confronted with the pathogenic effects of antifebrin, he smiles and says that antipyrin produces a rash; but Professor Sée shows that there is a great pathological difference between the eruption which occasionally accompanies the use of antipyrin and the hæmoglobinuria which results from the free or long-continued use of antifebrin. This untoward effect of acetanilide on the blood has made me somewhat cautious in its use here where the malarial infection itself is too prone to produce hæmoglobinuria, without the aid of a drug whose tendency is to precipitate such an undesirable result.

Nevertheless, I have frequently used antifebrin with satisfaction as an antipyretic, and in certain painful neuroses, in which it has been found useful or palliative. It is not so conveniently administered as antipyrin; especially is this the case with children and not a few adults, who soon tire of pills and capsules, while the alcoholic solution is often objection-

able for obvious reasons. The spirit of nitrous ether with antifebrin produces a beautiful, perfectly transparent solution, which remains unchanged, so far as I have observed, for a considerable length of time, with a single exception, in which the solution, several weeks after it had been prepared, had changed to a clear, bright scarlet color. The cause of this reaction was not investigated, as I then supposed it was probably due to a trace of nitrous acid in the ether, although Kohn, in *Rundschau* (Prague), observes that while an aqueous solution of antipyrin is changed to red, by the addition of a very small quantity of perchloride of iron, and to a blue-green by 1 to 100,000 of nitrous acid, antifebrin gives no such reaction with the reagents mentioned (*National Druggist*, March 4, 1887).

Methacetin is the most recent addition to the new antipyretics. It is said to be analogous to phenacetin, and has been tested to a limited extent by Dr. Franz Mahnert, assistant to Professor Von Jaksch.

Phenacetin (para-acetphenetidin) is also a recent introduction to this class of remedies. It is an acetyl compound of phenetidin,—*i.e.*, of ethylic ether of paramidophenol,—and it is, therefore, analogous to antifebrin (acetanilide). It is only slightly soluble in hot and cold water, nor is it any more soluble in the gastric juice or pancreatic extract. Still, as has been shown by experiments and observations recorded, it is absorbed slowly in some way, and exerts a powerful influence on the human system by its antipyretic and antineuralgic action (*Wiener Med. Woch.*, 1888, Nos. 26, 27). Dr. G. Kobler, assistant at the medical clinic of Professor Von Bamberger, at Vienna, under whose direction he experimented, was the first to observe the effects of phenacetin as an antipyretic remedy. Fifty cases with high temperature came under his observation. Dr. Kobler makes the following remarks with reference to the properties of this new antipyretic:

A specific influence on the course of the disease itself was never observed.

But phenacetin in every case was borne well without any toxic or even disagreeable effects.

The reduction of temperature is, as a rule, pretty rapid, while the subsequent rise is comparatively much slower. Large single doses of phenacetin have a decidedly more energetic effect than small doses frequently repeated.

There was never any cyanosis or collapse, such as is not infrequently seen during the administration of some other antipyretics. Even in the ten cases of pneumonia treated with phenacetin there was no deleterious action on the heart, which we often meet with in the course of this disease.

Summarizing his experience, Dr. Kobler comes to the following conclusions:

1. Phenacetin is a very efficacious antipyretic.

2. It has no disagreeable or deleterious effects, such as cyanosis or collapse.

3. It produces decided euphoria.

4. It is best administered in single doses of from 8 to 12 grains, instead of smaller ones given every hour or two.

5. The reduction of temperature after such a dose is from 3.6° to 4.5° F.

Dr. Hugo Hoppe, of Berlin, under the direction of Professor Albert Fraenkel and Dr. Paul Guttman, medical director of the City Hospital at Moabit, has collected notes of twenty cases affected with maladies in which there was pyrexia, nine of whom had typhoid fever. Dr. Hoppe's paper is a carefully written thesis, very elaborate and minute in clinical notes, taken with reference to the therapeutic action of phenacetin. He arrives at very similar conclusions to his predecessor, Dr. Kobler; and, although neither of these clinicians observed any untoward effects of the drug, even in doses of from 15 to 30 grains, Dr. Paul Guttman afterwards informed Dr. Hoppe that he had observed a severe chill in a child during the subsequent rise of temperature after the exhibition of phenacetin, without stating, however, the quantity administered or age of patient. Now, it is alleged that in Kobler's fifty and Hoppe's twenty cases there were no rigors observed upon the subsequent rise of temperature. A reasonable inference, therefore, would be, that in Dr. Guttman's single case, the child had probably received a dose which "transcended the exclamation point," or it may have been a single exception to the action of the medicine as a rule.

Professor Guiseppe Cattani, physician to the Grand Hospital at Milan, has tried phenacetin in more than fifty different cases, mostly febrile diseases, and his reports are almost exclusively favorable. Of the many forms of disease in which he has used phenacetin to advantage is rheumatic endocarditis, in which, he says, it acts like a tonic by rendering the heart's action steady, even where a valvular lesion has been established, as, for instance, in a mitral incompetency. Professor Cattani, like Professor Dujardin-Beaumetz, thinks that

the analgesic property of phenacetin outrivals its predecessors. Dr. Gaiffé has found phenacetin of considerable benefit in nervous polyuria. He says the heart and pulse are never influenced by this drug. Drs. Cesari and Burani confirm most of the antecedent observations of others with reference to the action of phenacetin. Drs. Misrachi and Rifat (*Bull. Gén. de Thérap.*, June, 1888) contribute a clinical study of phenacetin, in which they also recommend the drug as an affective antihyperthermic and antinervine remedy. In children's practice they advise it rubbed up in some sugar, which, they say, totally disguises any taste or smell.

Professor Rumpf, of Bonn (*Berliner Klin. Wochenschrift*, No. 23, 1888), says that this drug, as now produced by the manufacturers, is almost chemically pure phenacetin, and that it has no disagreeable action whatever if given in doses not exceeding 45 grains per day. In doses of 15 grains daily, he says, it is absolutely harmless, and that there are no nausea and vomiting, no cyanosis and syncope, and no untoward symptoms in patients with high temperature.

The dose administered by Professor Rumpf was 15 grains, by which the temperature was reduced 3.6° to 5.4° F. within from two to four hours. In a case of pleurisy, for instance, the temperature fell from 104° to 99.2° F., and on the next day from 103° to 99° F. within four hours. Having found that 15 grains of phenacetine would in some cases cause the temperature to fall below the normal, Professor Rumpf advises that the dose given in febrile maladies should never be larger than 8 grains, although, strange as it may seem, even when given in doses of 45 grains, it is alleged that the drug never caused any nausea, vomiting, chilliness, cyanosis, or eruption of the skin; only profuse perspiration was observed in some cases.

Encouraged by the favorable results obtained by Hoppe, Heusner, and Dujardin-Beaumetz with the administration of phenacetin in cases of hemicrania and other forms of neuralgia, Professor Rumpf tried the drug, with regard to its analgesic property, in a great number of cases with uniformly satisfactory results, the dose in such cases being 15 grains. The effects of the medicament were observed in many cases within thirty or forty minutes after its administration, in other cases not until an hour or two had elapsed.

From a considerable clinical experience with this new candidate for favor, Professor Rumpf arrives at the following conclusions with regard to its therapeutic properties:

1. Phenacetin is an antipyretic of reliable action and certain effects, free from all untoward and disagreeable symptoms.

2. Phenacetin is to be recommended as an antineuralgic in 15-grain doses, viz.:

*a.* In all cases of vaso-motor neuroses.

*b.* In locomotor ataxia against the lancinating pains, and in cases of chronic neuritis against neuralgia.

*c.* In various cases of neuralgia, to soothe the pain at least. Professor Mueller, at the meeting of the Verein für Innere Medizin, at Berlin, July 2, 1888, in a discussion with regard to the merits of phenacetin, confirmed the observations of the authors detailed herein, and further added that its exhibition is never followed by cyanosis and methæmoglobinuria by daily doses of 75 grains or less. This statement, if found true by other observers, will prove to be a strong argument in favor of the claim that the drug is comparatively safe in large doses, and innocuous in medicinal doses.

Some distinguished English physicians have expressed a favorable opinion of phenacetin, corroborating the observations of the writers already mentioned.

Professor Dujardin-Beaumetz (*Le Semaine Médicale*, April 24, 1888) says, . . . "Phenacetin is a rival of antipyrin and antifebrin; in a word, it is an antipyretic and a nervous sedative. It is not unlikely that it is more active than either of the two agents just named. . . .

"I have tried it in doses of 5 grains, given in wafers, and I must say that I have observed—as others have done before—a considerable reduction of temperature in tuberculous, feverish patients, and in those suffering from typhoid fever. This reduction, which amounted to 5.4° F., in some cases is remarkably persistent, although the dose is comparatively small: it lasts from eight to ten hours. On the duration of the disease itself, the new remedy has no influence, just as the other antipyretics.

"Phenacetin is also a strong analgesic, more powerful in its action, perhaps, than either antipyrin or antifebrin. And it acts very rapidly, in spite of its insolubility in the gastric juice; about twenty minutes after its administration, its effects may already be observed.

"I will state in addition that phenacetin does not produce cyanosis, like antifebrin, and that, in contradistinction to the latter, its

presence in the urine may be detected ; ferric perchloride will turn red, and cupric sulphate will turn green, if added to urine containing phenacetin."

Professor R. Lépine, of Lyons, in a paper on typhoid fever, also expresses satisfaction with the effects of this new medicament. He says, however, after daily doses of 90 grains there is some headache and some cyanosis ; but in doses of 45 grains he says it does not affect the heart, and produces neither cyanosis nor any other untoward symptom, except, perhaps, some sweating. He gives it in 8-grain wafers, of these six to eight a day. From the foregoing, it is to be inferred that the drug, in very large doses, or perhaps if long continued in smaller doses, may produce blood changes not very unlike the effects of antifebrin.

My own experience with this new remedy is very limited, but I have reason to believe that it will be found a convenient antithermic and analgesic remedy in cases where such medicaments are indicated, and probably it may be suited to cases in which the other antipyretics are not well borne. I have used only the 2-grain coated pill.

While I have not observed in the action of phenacetin any untoward symptoms, as is the case with antifebrin, neither have I observed, as a rule, the prompt response that so uniformly follows the exhibition of a suitable dose of antipyrin ; nor were the pills of phenacetin as acceptable to the patients, either children or adults, as the simple, convenient, and palatable solution of antipyrin in cold water.

Antipyrin, from its introduction six years ago up to the present time, has commanded not only the general attention, but almost the universal confidence, of many of the most distinguished medical authorities throughout the civilized world. It has been put to the severest and most impartial test in hospital and private clinics, resulting almost uniformly in a favorable verdict. No remedy of equal potency has, perhaps, been so extensively employed with so few disappointments or detrimental results. It has been resorted to in a variety of maladies, usually with satisfactory results. The literature on this single remedy would form a volume as large as the whole Pharmacopœia. Being comparatively innocuous in medicinal doses, also the most convenient, palatable, and doubtless the most prompt and efficient of the new antipyretics, and having maintained its brilliant reputation so long through divers lands and tongues, *antipyrin is the antipyretic par excellence, and deservedly stands at the head of this class of remedies, until something better shall be discovered.*

As an antithermic medicament, and as a remedy in painful neuroses due to obscure derangements of the central nervous system, I have for several years used antipyrin with such uniform satisfaction both to myself and to those who sought relief, that I have not felt inclined to experiment with other remedies not so well known and of doubtful utility, especially when great interests or even life itself was at stake.

In the *Nashville Journal of Medicine and Surgery* for October, 1888, in a contribution entitled "Ice-Packs in Cerebro-Spinal Meningitis," I have given the clinical notes, with comments, of an exceedingly violent attack of this malady in a lad 6 years old, whose temperature on my first visit was 105.5° F.,—a pyrexia quite unusual in this disease, inasmuch as only two of the ninety-eight cases analyzed by Dr. Githens had a like temperature (*Am. Jour. Med. Sciences*, July, 1867). The usual sedatives having failed to reduce the child's temperature, he was given about 10 grains of antipyrin occasionally, as seemed necessary, which not only promptly reduced the temperature, but it was equally valuable in "quelling those nerve storms," which seem to be one of the causes of death. I had not then seen the valuable paper of Guy N. Stephen, M.R.C.S., of the Cypress Medical Service, on antipyrin in epidemic cerebro-spinal meningitis (*Brit. Med. Jour.*, *St. Louis Med. Rev.*, June 30, 1888). The author thinks antipyrin has the good qualities of opium, ergot, belladonna, the bromides, and aconite in the direction of allaying the terrible pain, in influencing the course of the disease, and in warding off death. He does not insist that its action in these cases is by reduction of the temperature, and advises it in three 15-grain doses given in the course of an evening and night.

By the judicious administration of antipyrin to my little patient, with an occasional hypodermic of morphine and atropine, liquid diet, glycerin enemata, ice-packs to the head day and night, etc., the child was convalescing after four days of constant watching and careful treatment. He made a perfect recovery, and to antipyrin is due part of the credit.

It is not the object of this paper, however, to give even a synopsis of the multifarious symptoms and maladies in which anti-

pyrin has seemed to be useful. The modern medical literature of all countries abounds in reliable clinical records of its apparent usefulness in a great variety of diseases. This being the case, there is reason for believing that antipyrin, like quinine, has been frequently abused, without the proper discrimination in its therapeutic application. So generally are its virtues recognized by the profession, when judiciously administered, many of our patrons having witnessed its marvellous effects, keep the drug in their houses as a companion to their bottles of calomel and quinine, all of which they use more or less frequently without a correct knowledge of the therapeutic indications for the use of these potent drugs, which are so powerful for good, if properly administered when indicated; but, on the contrary, are equally powerful for evil, if given without an exact knowledge of the pathological condition of the patient, and this necessarily implies a knowledge of pathology and therapeutics, two of the most intricate and important branches of the medical sciences, without which the administration of such drugs is not only presumptuous but extremely hazardous.

Recently a somewhat feeble and delicate gentleman of this place was suffering from neuralgia. He was advised by an acquaintance, not a physician, to take a dose of antipyrin. He took 20 grains, or, perhaps, more. Soon afterwards he was prostrated and completely helpless. His symptoms, he said, were indescribable. This was his first experience with the drug, and he says it will probably be his last. His officious acquaintance is addicted to the habit of prescribing for people who complain of feeling unwell, and says that his family physician, a prominent practitioner in a well-known town, where he formerly resided, told him to give antifebrin or antipyrin whenever any one was suffering from headache. Surely any physician is justly reprehensible for distributing broadcast such empirical advice concerning this or any other potent drug, for reasons obvious to every intelligent reader of current medical literature.

Now this leads me to refer briefly to certain conditions in which antipyrin, and perhaps all other antipyretics of similar derivation, are inadmissible:

1. In all cases of cardiac weakness.
2. In diphtheritic affections in which there is evidence of myocarditic lesion.
3. After exhaustive hemorrhages.
4. During menstruation and in dysmenorrhœa.
5. In catarrhal pneumonia generally, and in lobar pneumonia when there is œdema of the lungs,—heart failure.
6. In the latter stages of tuberculosis.
7. In all cases of great debility and exhaustion, and in the latter stages of long-continued fevers.

It is believed that the foregoing contra-indications with regard to the administration of antipyrin and similar medicaments will receive the approval of physicians generally.

Dr. Gœtze (clinic of Professor Rossbach, of Jena) recommends that in every new case the extent of the effect of antipyrin should be first ascertained by the administration of small doses.

Dr. Demme, Professor of Medicine at Berne, says, "In cases of serious diphtheritic affections, the use of antipyrin has to be dispensed with on account of the danger of weakening the heart's action and the not infrequent myocarditic lesion that exists in such cases. . . . The use of antipyrin must also be forbidden in cases of very delicate persons and those who have a decided weakness of the heart."

Dr. Léon Arduin, of the Paris faculty ("Contribution à l'Étude thérapeutique et physiologique de l'Antipyrine"), observes: "The use of antipyrin must not be thought of in the case of persons having a weak heart, and it is advisable to treat very emaciated individuals with small doses only. . . . Similarly small doses are to be administered in cases of consumption. . . . In order to be entirely on the safe side, it is advisable to determine, in the first instance, the susceptibility of the patient for antipyrin, by the administration of small doses to every new case taken in hand."

Dr. Huchard administered 16 grains of antipyrin to a woman suffering from a severe dysmenorrhœa, which was promptly arrested, but accompanied by shivering and cyanosis, with a tendency to syncope, all of which gradually passed off in the course of half an hour. He has noted the same effect, but less marked, in two other cases, in which he had prescribed the drug under similar circumstances (*London Medical Press*).

I will remark, in this connection, that I have recently observed a somewhat singular circumstance follow the administration of antipyrin, which may be either an effect or coincidence; at any rate, it is new to me. A young lady (of unquestionable virtue), whose

menstrual periods had always been regular, was suffering from a severe attack of migraine about the time the menstrual molimen should make its appearance. As quinine had previously had an untoward effect upon this patient, none was given to her. Bromide of potassium and morphine, bromo-caffeine, and similar remedies gave only temporary relief. At this stage, after nearly a week of suffering, I administered 15 grains of antipyrin, which so completely abolished the pain that the patient was enabled to sit up half of the afternoon. A like dose was administered early next morning, followed by complete immunity from any subsequent attacks. But, strange to relate, the catamenia never appeared at the accustomed time, nor at the next two periods, two months later, which is at this writing. Can it be that antipyrin, on account of its hæmostatic property, was the cause of the suppression, or was it simply a coincidence, the suppression being accompanied by the migraine, which was itself merely a symptom of the functional derangement still existing? The novelty of the case seems worthy of note.

Iso-nitroso-antipyrin is a term applied to a combination of antipyrin and the spirits of nitrous ether containing free nitrous acid, the incompatibility having been observed first, perhaps, by the well-known discoverer of antipyrin, who suggested the term. Professor E. B. Stuart (*Western Druggist*, December, 1888) has found that the quantity of nitrous acid necessary to produce this reaction is so small that he has not been able to determine the lower limit. With a half-per-cent. alcoholic solution of antipyrin, he has observed that one-fifty-thousandth part of nitrous acid will give a strong reaction. Professor Potter has also made similar observations, and has shown by chemical formulæ the transformation which takes place. Following in the wake of these scientific observers, many others, less distinguished, and moved perhaps more by ominous apprehensions than by science, have been sounding the alarm concerning this "deadly compound," so-called, and it is amazing how many flies, cats, and dogs they have suddenly exterminated by this comparatively innocuous mixture, if we are to give them credence for their scientific exploits.

*Per contra*, Professor Horatio C. Wood and Dr. John Marshall, of Philadelphia (THERAPEUTIC GAZETTE, February, 1889) relate a number of physiological experiments which they have recently made with iso-nitroso-antipyrin, prepared by adding the calculated quantity of potassium nitrite to an acidulated aqueous solution of antipyrin. The liquid became at once bluish green in color, and in a few minutes there was an abundant production of crystals. These were collected on a filter, thoroughly washed with cold water, and allowed to dry on bibulous paper at ordinary temperature.

In determining whether the iso-nitroso-antipyrin possessed toxic properties, it was administered under various conditions to dogs and rabbits, but in no case, as the experiments show, were the slightest untoward effects observed.

Although as much as 1 gramme (15 grs.) of iso-nitroso-antipyrin was given to a dog, "no deleterious result, nor, indeed, any change in the behavior of the dog could be noticed." To another, 1 gramme was given, and repeated after the lapse of an hour; and, although the dog was under direct observation for four hours after this last portion was given, not the slightest change in his well-being could be noticed.

Experiments were made with antipyrin and c. p. ethyl nitrite, with the usual amount of alcohol and water to effect its solution, in the dog previously used in Experiment 3; no ill effects resulted. Three hours later, 1 gramme of antipyrin, in a separate solution, and .5 cubic centimetre of c. p. ethyl nitrite in the requisite quantity of alcohol and water, were given to the same dog; no ill effects resulted.

Dr. G. Evans, of Aberdeen, Miss., in the same issue of the GAZETTE, states that he had made similar experiments with antipyrin with sweet spirits of nitre in two experiments upon dogs, without any ill effects upon them. Dr. Evans further alleges that he has at various times administered 15 grains of antipyrin and half a drachm of sweet spirits of nitre mixed, not only without any untoward effects, but with apparent benefit, to patients having continued fever.

Finally, from what has been collated from various reliable sources, and condensed as much as possible to present the views of the authors in an intelligible form, together with the writer's own limited observations, the rational and impartial conclusion seems to be, with our present knowledge, that while these new medicaments are usually reliable and potential means for the reduction of high temperature and the mitigation of pain, they are, nevertheless, agents capable of producing more or less injury, if administered when contraindicated, or too freely for a consid-

erable length of time. It should be remembered also that it is an open question whether or not any real benefit results from the use of remedies which merely control symptoms without removing the cause.

Nevertheless, it seems to be the prevailing opinion among clinicians—an opinion the writer is inclined to share in common with others—that some of these new medicaments are not only palliative and seemingly of considerable practical benefit in many cases, but in some instances apparently curative, as has already been shown. At any rate, such is believed to be the opinion generally entertained with regard to antipyrin, at least, which seems to have a record radiant with unequalled service in the past, casting a halo of brightness on its future pathway.

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## *ARSENITE OF COPPER AS A REMEDIAL AGENT.*

By John Aulde, M.D., Philadelphia, Pa.*

DURING the month of September last a brief note appeared in one of the Philadelphia medical journals which was intended as an epitome of my experience with the use of arsenite of copper in the treatment of bowel affections, but more especially in cholera morbus. In recounting the results of my observations, I referred incidentally to the fact that the remedy had been called to my attention by Dr. Boardman Reed, of Atlantic City, N. J., well known to the readers of this journal, who candidly admitted its superiority for the relief of cholera morbus and allied affections. An extract from the publication will serve to indicate my earlier observations, and what I have to say at present will be confirmatory of that report, together with a record of some illustrative cases, showing more fully its therapeutic value. The following is the extract: "It [arsenite of copper] was used in probably twenty cases of bowel-troubles, in patients ranging from 1 year up to 60 or more, and varying from simple colicky pains to diarrhœa and vomiting of several days' duration, and one case of acute dysentery accompanied by profuse bloody discharges from the bowels, and in every instance the treatment proved eminently successful; not a single failure occurred, and, as a rule, the pain and tenesmus subsided after the first hour, or after the taking of the first five doses" (*Medical Register*, September 8, 1888, page 230).

In the following summary my remarks will be confined to such cases of bowel affections as are most frequently seen by the physician during the summer season and to cases of typhoid fever.

It will be appropriate, however, to say a word regarding the composition of the remedy, which will be useful to those who feel disposed to investigate the subject for themselves. This information should include the method of preparing the drug, as well as some reference to its pharmacology.

Arsenite of copper is known in commerce as Scheele's green, and is a fine, green powder, composed of arsenious acid and oxide of copper, one part of the former to two of the latter. It is soluble in ammonia and nitric acid, and yields crystals of arsenious acid by sublimation. Cupric arsenite differs from cupric aceto-arsenite, which is variously known as Paris green, Schweinfurt or Brunswick green, Vienna or emerald green, the pigment used for staining wall-paper, dress goods, artificial flowers, and other classes of millinery. Paris green is recognized as an active poison, and is frequently used by farmers in the rural districts for the destruction of potato-bugs and other insects. Its well-known activity has led to its use by sufferers from melancholia for the purpose of terminating life, while its use as a pigment has frequently been followed by cases of arsenical poisoning which were often difficult to understand. Paris green contains a much larger proportion of arsenic than Scheele's green, which accounts for the active toxic symptoms, while the presence of acetic acid probably assists materially to increase its diffusibility when taken into the system or applied externally.

Cupric aceto-arsenite contains 6 parts of arsenious acid, 2 parts oxide of copper, and 1 part of acetic acid, and may be identified by the usual chemical processes, and when heated in a test-tube, gives off fumes of acetic acid, crystals of arsenious acid being deposited, the residue left being the oxide of copper.

For medicinal use, the arsenite of copper is prepared as follows: To one part of arsenite of copper in fine powder, a sufficient quantity of sugar of milk is added, and trituration begun; additions are made of sugar of milk, trituration being continued, and sugar of milk added sufficient to make the quantity up to

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one hundred parts. One grain of this triturate, therefore, contains one one-hundredth grain of cupric arsenite, and for all practical purposes this method of preparation is sufficient, as a single grain will readily dissolve in water, and the division into small doses is thus more conveniently secured. When desired, this form of powder may be prepared in the form of tablets, containing one grain each, by which each tablet is made to contain definitely one one-hundredth grain. Particular attention is here given to the method of preparation, for the reason that my observations have been confined to the use of arsenite of copper clinically in quantities not exceeding one one-hundredth grain, and, when prepared in the form of tablets, its administration is extremely simple. A single tablet containing this amount should be dissolved in from four to six ounces of water, the dose of the solution being a teaspoonful. The quantity thus prepared will be sufficient for from thirty to fifty doses. Of this solution the patient is directed to take one teaspoonful every ten minutes for an hour, after which the remedy should be repeated at less frequent intervals; as a rule, however, these intervals do not exceed one hour, and the medicine is continued regularly while the patient remains awake.

By a simple mathematical calculation it will be found that the exact quantity taken at each period approaches the infinitesimal, and some of my friends have been disposed to look upon the matter with incredulity. References in the medical journals to my report, shortly after its publication, indicated that it was looked upon more as a curiosity in medical literature than an addition to our therapeutic resources. A medical friend, more sceptical than the rest, was induced to accept a small sample of this powder, to be used probably in the first emergency, when nothing else was at hand, or when the patient was suffering agonizing torture, while waiting the delay of the druggist. It so happened that, within a week or ten days, he was summoned to attend one of his patients who had been subject to frequent, but somewhat irregular, attacks of intestinal colic, which, on previous occasions, had given him no end of trouble. All remedies had been tried, but with varying degrees of success, and at times these attacks were so serious that the patient was laid up for several days, when hypodermic medication afforded the only means of relief. On the occasion referred to, the symptoms pointed to a severe and prolonged attack, and in a moment the idea flashed upon him that this case would furnish a crucial test of the therapeutic value of the remedy. Without any hopes of witnessing good results from its use, the solution was prepared as above directed, and the patient instructed to take teaspoonful doses at intervals of ten minutes, while the doctor in the mean time sat down to consider the propriety of following up the old methods. His surprise may be imagined, when, after taking the second dose, the patient expressed herself as feeling somewhat relieved, and at the expiration of twenty minutes, or after the third dose had been swallowed, the pain and all distressing symptoms had so far subsided that further medication seemed unnecessary, although the medicine was continued until near the end of the first hour.

The pharmacology of cupric arsenite will be written hereafter; our present knowledge of its physiological action must be largely hypothetical. That it partakes of the alterative character of arsenic, and like that remedy, when used in small doses, presents the characteristic features of a sedative to mucous tissues, will be apparent from its value in gastro-intestinal derangements. Whether arsenic alone would be sufficient to overcome acute affections like cholera morbus is a question which would probably be answered in the negative, but when combined with the oxide of copper in the proportions given above, we are warranted in assuming that the combination possesses astringent as well as sedative properties.

Clinical observation confirms this theory, and experience has abundantly shown its efficiency when administered in small doses in nearly all classes of acute intestinal affections.

The claim will be put forward that the dose is too small to produce any marked effect. By some the gratifying results which follow its use will be said to be due to its selective action, by others it will be pointed out as a clear case of special affinity, but it is doubtful if either explanation does more than serve as a cloak for ignorance; and the minuteness of the dose prevents our accepting it as a case illustrating the substitutive action of a remedy. Evidently it illustrates a factor in the treatment of disease which is too frequently overlooked,—viz., that the effect upon the economy of the exhibition of drugs is of a twofold nature; in other words, that it is a resultant dependent upon the presence of disease and the exhibition of the drug. If the disease were absent, the drug would not produce any appreciable

effect, but with the disease the medicine produces an effect in accord with its power over the nervous system. An illustration may be of value in clearing up this somewhat complicated problem, and we may select for the purpose the case of peritonitis. The late Dr. Alonzo Clark, by the exhibition of massive doses of opium, showed the remarkable tolerance of the system for that particular drug. A patient suffering from peritonitis was permitted to take sufficient opium in the course of twenty-four hours to kill half a dozen men, and apparently no bad results attended upon its use. The modern use of salines in like conditions depends upon a different principle, but the use of atropine in combination with morphine previous to the inhalation of chloroform or ether, is similar to the use of opium in peritonitis. The timely administration of atropine and morphine will prevent shock, but it is doubtful if the early administration of opium would prevent peritonitis, although it was at one time believed that it exercised a favorable influence upon the progress of the disease. Now these influences, whatever they may be, must be effected through the nervous system, and it is not beyond the range of possibilities that in such manner the arsenite of copper may produce its effect in the treatment of inflammatory affections of the alimentary tract.

The season of the year is approaching when we shall be called upon to meet such cases as are benefited by the remedy under consideration, and I desire to afford my brethren in the field an opportunity of introducing it into their practice; those who are unable to procure the remedy in the form of powder or tablets, will be cheerfully supplied with samples without expense until such time as the preparation can be placed upon the market, if there is a demand for it.

*Clinical Applications.*—Before me I have a list of a dozen or more cases that have occurred in practice within the past month, which I should feel warranted in classing as typical instances to be found in general practice. An account in detail would be tedious, and, besides, is unnecessary; so it will be sufficient to pass them in review, pointing out some of the most common symptoms presenting.

Elsie is a little girl of 4 summers, and has not been eating very regularly for a week or so, but only within a few days has there been any trouble with the bowels. The stools are frequent, yellowish, and slimy, and with each movement there is considerable pain; the tongue is coated, skin sallow, and the whole appearance indicates a condition which may be expressed in one word,—weariness,—but she does not show any tendency to sleep. The probabilities are strong that we have to deal with a malarial element, but attention is first directed to the condition of the bowels by the administration of arsenite of copper. The child is better the next day; in fact, the mother says she was lively after an hour or two, and has been quite bright, and offers to play with the other children. Antiperiodic treatment followed, and resulted in complete recovery.

Mr. T. is a man over 50, a farmer, and has been suffering from diarrhœa for several days. All the domestic remedies have been tried in vain, but the use of arsenite of copper, one tablet during the evening of the call and another the next morning, was all that was required to correct the difficulty, although he said he was quite well the next morning after taking the medicine for the evening previous.

John H. is a hard-working young man, a grave-digger, and for some days now he has been very much depressed; there is a loss of appetite, abdominal pain, weakness, and sleeplessness, and a slight rise in temperature, with a pulse of 120; the stools are watery, offensive, and have been as frequent as ten in the day. Everything points to typhoid fever, but, as the arsenite of copper is a useful remedy in that disease, he is placed upon that, and is given a supply sufficient to last two days, at which time he is to return unless he is much better. He visited the office about mid-day, and went immediately home and began taking the medicine, and was able to go to work on the following morning, although still weak from the effects of the diarrhœa.

Henry is a boy about 9 years of age, who has been under domestic treatment for the past few days for looseness of the bowels. He has great pain, frequent movements from the bowels, is languid, no appetite, but great thirst, and complains all the time of headache. Has had nose-bleed the afternoon of the day the mother called, and she is greatly exercised for fear that the boy is taking typhoid fever. The vomited material is of a grayish, slimy appearance, and he has slept but little for several nights. For that evening this patient was to take one tablet of the arsenite of copper between eight o'clock and bedtime, and in the morning he was to take the remedy again in the same way. The under-

standing was that, should the boy's condition not appear to be improved, I was to be advised; but no tidings were received until the next day, when the mother called, and said Henry was all right when he awoke the morning after taking the medicine. The real cause of this attack I have not been able to determine, as an older child had a similar trouble several months ago, but was relieved in the same manner as this one, except that recovery was less prompt. He was confined to the house for several days, but had been laid up for some time when I first saw him.

The value of arsenite of copper in the treatment of typhoid fever should not be overlooked, although I do not advance it because of its germicidal or antiseptic properties, but on account of its great value in the treatment of non-specific bowel-troubles which are so common at all seasons of the year. In the early history of this disease it is often extremely difficult to determine the real character, so frequently is its oncoming masked by complications. The patient will sometimes complain of supra-orbital neuralgia and nothing more; another time it will be apparently a clear case of malarial cachexia; and, again, it will be simple nervousness of which the patient complains; but whenever there is the least indication of derangement of the bowels, or if there is an elevation of temperature, along with acceleration of the pulse, and other symptoms confirm the suspicion, I always take the precaution to administer the arsenite of copper, confine the patient to bed, upon a restricted or a milk diet. Following up this plan for a year, I have seen the best results, and think it is not beyond the bounds of truth when I say that many cases which ordinarily would have advanced to typhoid fever, in the course of a few days, have taken a decided change for the better, and the danger has been averted. The symptoms of this malady are so well known that it would be a waste of time to enumerate them, and it will be sufficient to say that some of these suspected cases have continued for as long as a week before the disappearance of the elevated temperature in the evening. That they were of malarial origin may be suspected, but in a number of instances this matter was taken into consideration, and decided in the negative, because lately they have all been subdued by the use of arsenite of copper alone, except where there was great prostration, owing to the delay in consulting the physician, when nux vomica in small doses was added to the treatment.

The method of administration in typhoid consists in the use of a single tablet containing one one-hundredth of a grain daily, the medicine to be distributed throughout the day by solution in water. In cases as ordinarily seen, its addition to other treatment is always attended with the best results; the temperature shows a favorable change, the pulse is less frequent, there is an improvement in the abdominal pain and in the frequency of the stools, and vomiting is controlled better than by the use of almost any other remedy. When this drug is employed, it has always seemed to me that the need for other remedies was largely superseded by it, the treatment of the disease being for the most part symptomatical, and it is with no little satisfaction that I offer it to the medical profession as an adjuvant to our therapeutics in this affection.

4719 Frankford Avenue.

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### *SALICYLIC ACID IN THE TREATMENT OF MALIGNANT SCARLATINA.*

Dr. Shakowski writes in the *Revue Mensuelle des Maladies de l'Enfance* for June, 1889, that he has administered salicylic acid with the greatest success in one hundred and twenty-five cases of grave scarlatina occurring in children, the mortality being reduced to three and a half per cent. Ordinarily his method of administration was in the form of a mixture consisting of 1 part of salicylic acid to 75 parts of water, and 30 parts of syrup of orange-peel, a teaspoonful of this being given every hour during the day and every two hours during the night. He writes that under the influence of this remedy the temperature is rapidly reduced, in certain cases, even at the end of forty-eight hours, the temperature falling four degrees. Habitually all traces of fever disappear after the tenth day of the disease. Nevertheless, the author advises to prolong the treatment for some time longer than this in progressively decreasing doses, so as to avoid any danger of relapse. Through the use of this remedy the author believes that he has avoided the most serious complications of scarlatina, such as uræmia, anasarca, and diphtheria. He claims that this medication will only be ineffectual when given too late,—that is, after the fourth day of the disease, or when there exists some grave chronic complication.

# The Therapeutic Gazette

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## Leading Articles.

### *ANÆSTHESIA.*

THE subjects of selection and methods of use of anæsthetics, the danger of anæsthesia, and the treatment of the accidents which occur during it, have been so much discussed, indeed, so hackneyed, that we almost feel like apologizing for alluding to it. The matter is one, however, of the greatest importance, and the reporter of a case of death from ether, in the *New York Medical Journal* of May 18, held that the knowledge of physiological therapeutics has not yet been thoroughly diffused through the rank and file of the profession. In this case a middle-aged Frenchman, who had been suffering from tubercular disease, with albuminous urine, and aortic and mitral systolic murmurs and feeble heart-sounds, was given ether with the intention of the performance of Syme's amputation. A few moments after etherization was commenced the respiration faltered, and the patient became deeply cyanosed. This somewhat alarming condition quickly passed away, and five minutes later the assistant having the pulse under observation suddenly announced that it had ceased. "Immediately hypodermic injections of brandy, ether, and sulphate of atropine were given; amyl nitrite was applied to the nostrils, artificial respiration was practised, and the head and shoulders were depressed by elevation of the foot of the table; but all was in vain; the patient was dead."

According to the surgeon in charge who reports the case, the death was the result of syncope, and largely the outcome of the diseased condition of the heart, which was found at the autopsy to have a completely adherent pericardium, atheroma of the aorta, and stenotic mitral valve. The kidneys were also in a condition of advanced contraction.

In the first place, it is essential that a case like this be not allowed to go upon record as one of death due to ether. We doubt very much the wisdom of attempting a severe surgical operation like amputation of the foot in a man who has disease of the kidneys, disease of the mitral and aortic valves, and the other numerous organic ills which affected this Frenchman. If an operation was justifiable at all in such a case, both the surgeon and patient should appreciate the excessive risks, and no therapeutist should charge the death against the anæsthetic. The peculiar greatness of the danger in the case becomes manifest when the selection of the anæsthetic is thought of. The condition of the kidneys strongly contraindicated the use of ether; the clinical evidence which we now have being enough to demonstrate that chloroform is safer than ether in cases of renal disease, unless the heart-muscle has undergone secondary degeneration. This is probably because the amount of chloroform required to produce anæsthesia is so much smaller than that of ether that less strain is thrown upon the organ that eliminates it, hence the diseased kidneys are less irritated by chloroform than by ether. On the other hand, in the case under consideration the condition of the heart evidently contraindicated the use of chloroform; in fact, both ether and chloroform were contraindicated, and nothing but the gravest necessity could justify their use.

It is especially, however, to the treatment employed that we want to call attention, and we have no hesitation in affirming that if the patient had any chance of recovery at all, such chance was destroyed by the methods used for his relief. Suppose a doctor, having a case of opium-poisoning to deal with, were, for the purpose of relief, to administer morphine hypodermically, what

would be the judgment of the profession as to the method? Evidently that it was a madness. But here we are told that hypodermic injections of ether and brandy were given. Probably almost every one in the profession would agree with us in believing that the use of hypodermic injections of ether was improper; possibly only a minority would agree to the statement that the administration of the brandy was almost, if not quite, as dangerous. Ether and alcohol are, however, chemically almost identical; physically, except in the matter of volatility, they are exceedingly alike, and in their relations to the human organism they seem to differ only in so far as one is more volatile, and therefore more quick and more fugacious in its action than the other. Each primarily stimulates and secondarily depresses the heart, and we believe that in accidents of etherization the administration of alcohol is equivalent to the administration of more of the poisonous agent. This conclusion rests also not simply upon *a priori* argument. As long ago as 1883, R. Dubois, in a series of experiments made upon the lower animals, found that the free administration of alcohol intensifies the influence of chloroform and lessens the minimum fatal dose. Certainly alcohol and ether are more nearly equivalent remedies than are alcohol and chloroform.

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### *PERSONAL DISINFECTION IN CONTAGIOUS DISEASES.*

A POINT which appears to us of considerable practical value, and which has, doubtless, suggested itself to many physicians attending contagious diseases, and with almost equal certainty has but seldom been acted upon, is brought again to our attention through an article published in the *Medical Record* for June 22, 1889, by Dr. L. Mervin Maus, of the United States Army. We can now scarcely deny the germ origin of such diseases as diphtheria, scarlet fever, and measles, and it is further well established that the spread of these diseases is due to a material contagion, which, in the case of scarlet fever, is almost confined to the desquamated particles of the epidermis. It is well established that the contagiousness of scarlet fever increases with the onset of desquamation, and it is surprising, since the contagious matter is in all probability located in these desquamated scales, that the disinfection of the skin of the patient has not become a routine practice in the treatment of this disease. Unfortunately, one of us is at present passing through an epidemic of scarlatina in his own family, and there the first thought was to endeavor to protect the other members of the family by a disinfection of the skin of the patient, employing the use of corrosive sublimate in 1 to 1000 solution. In all probability this process was not inaugurated sufficiently soon, and did not entirely prevent the spread of the disease. It is known that very close approach to a scarlatina patient, or more or less direct personal contact with the patient, is required for the spread of the disease. If we could only thoroughly disinfect all the surroundings of the patient, we might hope, then, to do away with the spread of the disease, besides greatly reducing the necessity for prolonged isolation. Dr. Maus publishes the following rules as a preventive measure for the extension of this disease, and states that his practice has been founded on personal experience, and so far has been entirely satisfactory. He even states that he believes that we can through the employment of this method of treatment ignore isolation, in cases of mild scarlet fever, and ordinarily permit patients to join the family circle in ten days to two weeks.

1. Sponge the patient thoroughly morning and evening with a tepid solution of corrosive sublimate, 4 to 1000, as soon as the eruption makes its appearance.

2. Wash the hair once daily with a solution of the corrosive sublimate, of the same strength, and also a solution of borax, 1 to 250.

3. Disinfect the urine, fæces, and expectoration, also the discharge from the ears and nose, if there be any. A solution of the bichloride, 1 to 1000, is best for this purpose.

4. As soon as the patient is permitted to leave the bed have the body washed with warm water and soap, then sponged with the 1 to 4000 bichloride solution, wiped dry, and anointed with the following ointment:

℞ Sodii biboratis,
Zinci oxidi, aa ʒiv;
Ol. gaultheriæ, ʒss;
Vaselini, ℥iv.

The hair should be thoroughly washed with the bichloride and borax solution.

5. The patient is then to be enveloped in fresh and clean clothes throughout, and al-

lowed to leave the sick-room if his condition otherwise admits of it.

6. The bed-linen, soiled clothes, towels, etc., should be placed in a suitable sublimate solution and boiled, and the room well disinfected with sulphur. The sulphur candles are very convenient, and the disinfection should be repeated the second day, as the germs are very tenacious of life.

7. Require the nurse or attendant to keep the hair, face, and hands well disinfected during attendance, and to likewise make a complete change in his or her garments on date of the disinfection of the sick-room.

8. Continue the provisions of the third and fourth rules once daily until desquamation is complete.

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### *NITRATE OF SILVER IN PURPURA HÆMORRHAGICA.*

CERTAIN authors divide purpura into two forms,—the sthenic and asthenic,—a distinction which may be of service in furnishing therapeutic indications. The sthenic form is generally recognized by the pulse and the general state of the patient, and it may be imagined that in this form the walls of the capillaries are ruptured, without any alterations in their structure, on account of the exaggerated pressure in the circulatory system. In this form, reducing treatment is evidently indicated, and it is claimed that diminishing the blood-pressure will produce curative results. By far the greater number of cases of purpura hæmorrhagica, however, are of the asthenic or cachectic form, of which the termination is so often fatal. In this form there is more or less diminution in the red corpuscles and the solids of the blood, with augmentation of the white corpuscles, the great danger being in the incessant tendency to hemorrhage, which finally leads to fatal prostration. In such cases the state of the patient calls for an improvement in the health of the patient, and to the building up of his strength rather than to depletion. As a consequence, vegetable acids, especially citric acid, mineral acids, hæmostatic astringents, all occupy the first rank as remedies which are indicated; ergot also, in subcutaneous injections in the form of ergotine, may likewise prove efficacious. To this list of remedies Dr. V. Poulet (*Bulletin Général de Thérapeutique*, May 30, 1889) would add nitrate of silver, since he believes that the admirable results which this remedy produces in the treatment of purpura would almost warrant attributing to this remedy the possession of some specific properties. In support of this view, Dr. Poulet reports two cases of purpura, which, he stated, were taken from his record of numerous others. In the first of these the hemorrhage resisted the most varied and energetic forms of treatment, such as hypodermic injections of ergotine, tamponing the nasal passages, etc., and finally yielded to the internal administration of the nitrate of silver. In the second case, the remedies employed were less numerous, but equally fruitless; and here also nitrate of silver was especially efficacious, for, in a short time, all tendency to the formation of purpuric effusions disappeared and the tendency to hemorrhages was entirely overcome. Dr. Poulet believes that nitrate of silver produces this effect in these affections by its action on the vaso-motor supply of the capillaries. He administers 1/6 of a grain of nitrate of silver twice daily in pill form, taking care to give it at least half an hour after eating.

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### *VIRGA LATIFOLIA—A NEW DIURETIC.*

IN the *Revue Générale de Clinique et de Thérapeutique* for May 30, 1889, Dr. Mascarel writes that the leaves and flowers of the solidago virgaurea (*Virga latifolia*) possess marked diuretic properties. He gives a tablespoonful of the powder mixed up with a raw egg and a little sugar on the first day. The second day he gives the same quantity morning and evening, and goes on increasing for a week until at the seventh day seven eggs and seven tablespoonfuls of the powder are administered, together with a little castor-oil from time to time to combat constipation. This treatment is claimed to produce marked diuresis in cases of heart-disease, even when other diuretics have failed.

In commenting on the above article, Dr. L. Roche writes (*Revue Générale de Clinique et de Thérapeutique*, June 13, 1889) that in 1886 Dr. Duché read an article before the Société Médicale de l'Yonne on the good effects of the virgaurea in different chronic vesical affections. He regarded it as one of the most active diuretics, and administered the drug in the form of an infusion of from 225 to 450 grains of the leaves in a quart of water, this amount to be taken by the tumblerful in twenty-four hours. At the end of forty-eight

hours it is stated that a marked diuretic effect is produced. Dr. Roche adds that he has likewise had considerable experience with this drug as a diuretic, especially in ascites from cirrhosis of the liver, where in his hands it has yielded valuable results. He does not think that the method recommended by Dr. Mascarel is any better than when administered in infusion.

The plant referred to above evidently belongs to the composite genus of solidago, of which solidago odora, or sweet-scented goldenrod, was formerly officinal, while the solidago virgaurea was formerly used as an astringent, and supposed to possess lithontriptic virtues. Like other members of this class, we can imagine that the plant referred to may be diaphoretic when given in warm infusion, and it is not unreasonable to suppose that it likewise possesses more or less diuretic properties. It is mentioned in this connection by Cazin and Bossu as a diuretic, but until recommended by Mascarel, who states that the advice was given to him by an empiric, it has never been recommended, as far as we know, that the leaves and flowers should be administered in bulk. In this country they are used, we believe, as a substitute for common tea.

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### *SILICATE OF SODIUM.*

As long ago as 1872, Dumas, and almost simultaneously Rabuteau and Papillon, became interested with the silicate of sodium and its powerful antiseptic properties, preventing both putrefaction and fermentation. Their results were confirmed by some other French writers, especially by Picot and Champouillon. Dubreil, Marc, Sée, and other French writers afterwards affirmed that the silicate was a very valuable remedy in the treatment of chronic urethritis, vaginitis, diarrhœa, and other mucous fluxes. The remedy has not, however, succeeded in working its way into professional favor. The cause of this seems to be indicated by the recent researches of R. Lowenhaupt, who, in his inaugural thesis, records a number of experiments, and reaches the conclusion that the silicate of sodium has practically no influence upon putrefaction; that the antiseptic power which it sometimes exerts depends upon the appearance of free soda in it, the soda having the power of dissolving the fungi.

### *EMPLOYMENT OF LOBELINE IN THE TREATMENT OF ASTHMA.*

In the THERAPEUTIC GAZETTE for September 5, 1886, we referred to an article by Dr. Nunes as to the use of lobelia inflata in asthma. Dr. Nunes employed the tincture in doses of ½ to 1 ounce without ever meeting with an accident, and claims that the inertness of this drug in the hands of others is owing to the insufficient dose employed. At the recent Brazilian Congress of Medicine and Surgery, held at Rio Janeiro, Dr. Silva Nunes presented a subsequent article on the same subject, in which he stated that in the last two years he had continued to achieve good results, and attributed them less to the large quantity administered than to perseverance in the employment of the remedy. He has found, together with others, that the tincture of lobelia administered in this way will frequently produce vomiting. This effect he attributes to the disagreeable taste of the tincture rather than any specific emetic properties of the drug itself. He was, therefore, led to inaugurate a series of experiments with the active principle of the lobelia,—the alkaloid lobeline. Dr. Nunes commenced his experiments with the administration of lobeline in doses of 1/6 of a grain, given at long intervals, while all other treatment was suspended, and gradually increased the quantity given until 6 grains were given to asthmatics without producing any toxic effects. The tolerance for this large dose of lobeline, claimed to exist by the author in asthmatics, is attributed by him to the excited condition of the nervous system, in which he finds the primary cause of the asthmatic affections.

Lobeline, according to Dr. Nunes, may be administered subcutaneously without producing any local reaction, and he advises its use in this manner where an immediate effect is desired. The author publishes tolerably full notes of nine cases of asthma in which lobeline, in doses varying from ¾ of a grain to 6 grains, seemed to produce decided relief from the asthmatic symptoms, and he terminates his memoir with the following conclusions: 1. Lobeline does not possess the toxic effects generally attributed to it in the doses which he recommends. 2. It possesses no emetic or nauseating properties, as is the case in lobelia, and its employment is, therefore, preferable where lobelia is indicated. 3. He has employed it in doses of from ¾ of a grain to 6 grains daily for adults; for children, 1/6 to ¾ of a grain. 4. It has no irri-

tating action on the cellular tissue, and therefore may be administered in hypodermic injection,—a fact which renders it more preferable than the tincture of lobelia. 5. The evident action of lobeline on the nervous system would seem to indicate its employment in other convulsive affections, such as tetanus. 6. The cases in which he has employed lobeline have remained permanently cured.

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### *A NEW DIAGNOSTIC SIGN FOR THE DIFFERENTIAL DIAGNOSIS OF GASTRIC CANCER AND ULCER OF THE STOMACH.*

THE differential diagnosis between cancer and ulcer of the stomach is frequently obscured by the greatest difficulties. There is no pathognomonic sign which in any given case can positively establish the existence of the one or the other affection. In deciding as to the presence of cancer, the diagnosis is generally determined by the advanced age of the patient, the localization of the pain in the epigastrium, the interval elapsing between the ingestion of food and vomiting, the black coloration of the hæmatemesis, the gastric dilatation, the presence of the tumor or induration in the region of the epigastrium, the yellowish cachexia, the production of white, painful œdema, the rapid progress of the disease. On the other hand, in gastric ulcer the patients have not usually reached middle age; there is radiation of pain to vertebral column; vomiting follows almost immediately on the ingestion of food; vomited blood is brilliant red in hue; while dilatation of the stomach, epigastric induration, and especially cachexia, may be absent; and, finally, the progress of the disease is variable, and frequently remissions occur in the course of its evolution. Unfortunately, there are, however, numerous cases in which part of these signs are absent, or even in which both classes of symptoms may occur in the same patient. Numerous attempts have been made to determine some positive diagnostic sign. Thus, in 1886, Troisier noted the implication of the subclavicular ganglia in cases of cancer, and insisted upon the diagnostic importance of this symptom.

In 1887, Hayem called attention to the great excess over normal of the white blood-corpuscles of the blood in cases of cancer, while recently great stress has been laid upon the character of the acid in the gastric juice, it being claimed that in cancer of the stomach hydrochloric acid is no longer secreted, and is thus absent from the gastric juice. Nevertheless, all these special signs have met with contradiction.

A point proposed some time ago by Professor Rommelaere, of Brussels, and since emphasized by numerous others, consists in the observation that in malignant tumors, whatever may be their locality or morphological aspect, the amount of urea excreted in the urine gradually decreases, until, finally, it is not more than one hundred and eighty grains in twenty-four hours.

In a paper published in the *Gazette Hebdomadaire de Mèdecine et de Chirurgie*, May 10, 1889, Dr. Rauzier adopts this view, and he reports a case which presented the clinical picture of gastric cancer in which the diagnosis of gastric ulcer was based upon the continued presence of the normal amount of urea in the urine. This diagnosis was confirmed by the post-mortem examination. Dr. Rauzier concludes that, in cases where the clinical symptoms are insufficient to establish the differential diagnosis between cancer and ulcer of the stomach, without ignoring other methods of examination, such as the examination of the subclavicular glands, enumeration of the white blood-corpuscles, and the search for hydrochloric acid in the gastric juice, the estimation of the daily amount of urea excreted would give important assistance in making the diagnosis.

Of course the reduction of the excretion of urea is simply one form of expression of the depressed nutritive state of subjects suffering from cancer, in which there is faulty assimilation of nitrogenous food-principles, so that while increasing the albuminous ration must increase the amount of urea, less would be excreted by a cancerous subject than by a healthy individual on the same diet. We cannot believe that this sign of cancer would be of very early occurrence in this disease; it could not appear until the tissues have been largely depleted of their store of proteids, and until digestion and assimilation had been seriously disturbed. At first sight we are not disposed to admit that this sign would be absent in all cases of gastric ulcer, for, if the cause given be the correct one, it is inconceivable that it should not also be present in certain cases of advanced gastric ulcer. Further estimations of the amount of urea excreted in different wasting diseases are needed before this diagnostic point can have the value attributed to it by Dr. Rauzier.

## Reports on Therapeutic Progress.

### *THE SURGERY OF THE GALL-BLADDER.*

At the meeting of the Eighteenth Surgical Congress, held in Berlin, June 1, HERR CREDÉ (Dresden) took this subject for an address. His observations were based on five cases. All had suffered from gall-stone colic for more than eight years, and all were reduced in flesh. In one case no tumor could be felt, but in the others the swelling was evident. The tumor was of great diagnostic value. If the gall-bladder felt soft, it must be more or less normal; it could fill up, as it was not attached to the neighboring parts, and a normal condition might be restored by cystotomy. In other cases, in which distention could not take place, there was degeneration, and there was no chance of restoring the functions of the viscus. In such cases extirpation was demanded. In one case in which he could see only the point of the gall-bladder like the tip of a finger, he raised the liver, separated the gall-bladder with great difficulty, opened it, and removed two large stones. On examining with the finger, he felt the end quite rounded; he could not penetrate into the ductus communis. As he was about to remove the gall-bladder he felt another rather large stone deep down, which was plainly the cause of the severe symptoms. He removed the stone and then excised the gall-bladder. Four arteries spouted, which were compressed with forceps and removed after twenty-four hours. On account of the firm attachment of the liver to the gall-bladder it was thoroughly cauterized. No reaction; no fever. Later, some calculi came away, and always in connection with an attack of colic. In the second case four large stones were removed, and the gall-bladder was then drained. When the gall-bladder was removed from dogs, they immediately got enormous appetites; but notwithstanding a plentiful supply of food, they emaciated considerably. In the two cases mentioned quite a fabulous appetite declared itself shortly after the operations, and the first patient soon lost twelve pounds in weight, and the second five. They did not show any increased weight till the sixth week. He thought that notwithstanding the results hitherto had been unfavorable, they would be much better when the method of operating had become perfected.

HERR THIEM (Kottbus) had a patient sent to him with an abdominal tumor. In injecting the rectum with water, the ascending colon could be plainly felt, and he concluded the tumor was a malignant one of the omentum.

*Operation.*—As it was impossible to separate the tumor from the abdominal wall, this was cut straight through with the scissors. He then followed a band upward and reached a second tumor,—the gall-bladder. This was intimately adherent to the intestine and omentum. Severe parenchymatous bleeding. After its arrest and ligature of the cystic duct the tumor, which was hour-glass shaped, was removed. Not only the gall-bladder, but its connecting passage and the tumor of the abdominal wall were distended with gall-stones. A gall-stone fistula soon formed, and healing never took place.

HERR KÖRTE demonstrated some gall-stones, one of which he removed from the interior of the small intestine, which had become blocked up by it. The patient died twelve hours after the operation.

HERR REHN (Frankfort) had also removed a biliary calculus that gave rise to symptoms of ileus. The patient recovered.

HERR HAGEMANN had performed three operations of the kind under discussion, two cholecystotomies, and one cholectomy. All the cases recovered. The subsequent history of the cases was as follows: The first patient lived a year, then became cachectic, and died. The second became ill three months after operation, with pains and shiverings. Examination revealed echinococcus cysts in the stools, evidently from the liver. An exploratory incision was made November, 1888. Three days later she became somnolent, and died of septicæmia. Section showed a rather large collection of echinococci that had burst in the direction of the surface. The third patient was living, and three weeks before had a slight attack of colic.

HERR HELFERICH (Greifswald) had had a fatal case in which a gall-stone gave rise to symptoms of ileus. The half of a gall-stone was found at the point of entry of the gall-bladder into the duodenum. It had here destroyed the muscular tissue, and in consequence of this had set up circumscribed peritonitis, dragging in its train the ileus, and paralysis of intestine.

HERR TISCHENDORF (Leipsic) had extirpated the gall-bladder two years ago. The patient was still quite well, and was then half way through a normal pregnancy.

HERR LANGENBUCH (Berlin) had had a total of twenty-four extirpations of the gall-bladder. The more experience he had, the more he felt the need of collecting further

information and of hearing the observations of his colleagues. It was very difficult to formulate any guiding principles for the choice of the method of operation. Cholecystotomy was an operation that well deserved recognition, although its results were not so favorable as had been represented. Out of seventy-five cases of operation there had been two relapses, eleven deaths, and sixteen cases of fistula; in 61.3 per cent. uninterrupted recovery. He had only lost two out of twenty-two cases, through too late operation. In cases in which he felt the ductus choledochus filled with calculi he would not operate at all, or with the greatest caution.—*Medical Press and Circular*, June 5, 1889.

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### *A NEW TREATMENT OF THE TRANSVERSE FRACTURE OF THE PATELLA.*

At the meeting of the Clinical Society of London, held May 24, 1889, MR. MAYO ROBSON related a case of transverse fracture, which he treated by a new method to secure bony union without opening the joint (*Lancet*, June 1, 1889). The bone was broken just below the middle, as the indirect effect of a fall. He pointed out how unsatisfactory were the results obtained by the methods usually resorted to, and added that although he had never met with an accident in wiring the fragments, yet it was impossible to shut one's eyes to the fact that the patient was exposed to a great risk. He had, therefore, applied himself to the discovery of a method whereby the advantages of bony union might be secured without incurring the risk of opening the joint. In this case the skin over and around the joint was cleaned and rendered aseptic, and the joint was then aspirated. He then obtained two long steel pins with glass heads, such as ladies use for fastening the bonnet, and having thoroughly purified them, he drew the skin well up over the upper fragment, and introduced the needle transverely through the skin and muscle just above the level of the upper fragment, repeating the operation with the other needle at the upper end of the ligamentum patellæ. Gentle traction on the pins then easily brought the fragments into apposition. The ends of the pins were then clipped off, leaving about half an inch on either side, and the whole covered with antiseptic gauze. This dressing was left undisturbed for three weeks, and when it was removed there was no redness or other sign of irritation having been caused. The temperature was never above normal, and the patient felt very comfortable all the time. The fragments seemed well united, and the needles were, therefore, withdrawn, a plaster-of-Paris splint applied, and the patient allowed to go home. We pointed out that the only precaution necessary was to draw up the skin over the upper fragment, in order to avoid undue traction upon it when the fragments were approximated. The integument should be rendered aseptic as well as the pins, and the latter should be stout enough not to bend when drawn upon. If there was much effusion, it would be desirable to aspirate. As union occurred without the throwing out of any amount of provisional callus, it was always well to insist upon the use of a Thomas's splint for some time after. The advantages of the operation were its simplicity, the absence of risk, and the obtaining bony union. He said that this was the second case of the kind upon which he had operated, and more recently he had performed the same operation in a case of fracture of the olecranon, but it was as yet too early to say anything as to the result.

MR. HEATH had examined the case, and thought the union was bony; if it were fibrous union, the distance between the fragments was so short that bony matter would soon develop between them.

MR. GODLEE thought the procedure a very simple one. He asked how the torn fibrous expansion of the quadriceps aponeurosis was prevented from becoming tucked between the ends of the broken bone.

MR. SYMONDS asked whether in the first case operated on good bony union had been obtained. It would be interesting to know what would be the condition of the joint three months later. Mr. Lund had passed pins through the bone itself, but he found this difficult to do when the fracture was near the lower end of the bone.

MR. R. W. PARKER wondered whether there was any real advantage in getting bony union. He related the history of a case where a patient, rather than submit to the tedious waiting necessary to secure bony union of a second fractured patella, refused to come into hospital, and was treated as an out-patient; a widely separated fibrous union resulted, with which the patient was quite contented, being able to walk easily and to earn her living.

MR. WARRINGTON HAWARD doubted if the union were bony; but, even if not, it was certainly very firm and useful. A medical friend

of his sustained a fracture of the patella, and ligamentous union resulted, there being three-quarters of an inch separation; but, notwithstanding this, absolutely no inconvenience followed, and the limb was thoroughly serviceable in every way.

MR. HEATH said that it was a great thing to avoid tampering with the joint. Few medical men had such confidence in antiseptics as to have their own knee-joints opened and the fragments wired. His own treatment was to aspirate the joint and to put the limb up in plaster of Paris.

MR. ROBSON, in reply, said that one great advantage of the method was that it was practically unattended with danger. In both cases he aspirated the joint, passed a needle between the fragments, and lifted up any aponeurosis that might be in the way. He had met with a case in a sailor with a fibrous union, who was unable to do his work, though he was quite restored after the fragments had been wired. In the first case he had operated on, the splint had been removed too early, and the result was that the union had given way, and there was little separation between the fragments.

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### *THE TREATMENT OF URETHRAL STRICTURE.*

At the third annual meeting of the American Association of Genito-Urinary Surgeons, held at Newport, May 21 and 22, 1889, DR. A. W. STEIN, of New York, read a paper entitled "Aphorisms on the Treament of Urethral Stricture," in which he especially dwelt upon the necessity of determining the patient's state of health before operating, and especially in regard to the manner in which the kidney fulfilled its function (*New York Medical Journal*, June 8, 1889). It was also extremely important to decide whether the obstruction was a greater evil than the proposed remedy. The first proposition he offered was that gradual dilatation was unquestionably the safest way to treat urethral stricture. With this method it was unusual to observe rigors and urethral fever operating. One objection to the method was that patients coming from a great distance often demanded a rapid cure, but the patient's life should not be jeopardized to save time. Thirdly, a urethra would support incision better, when this was necessary, if it had previously become accustomed to the passage of the dilating instruments. Fourthly, the nearer the coarctations were to the meatus, the more unyielding and resilient were they, and they were only amenable to dilating urethrotomy. It was rare that rigors and fever followed incisions near the meatus. Fifthly, the danger of internal urethrotomy increased with the distance of the stricture from the meatus. On the other hand, the nearer the stricture was to the bulbous portion of the urethra, the more dilatable it was. Dilatation should, therefore, be first thoroughly tried. Sixthly, an external incision should be made preferably to an internal incision, in strictures requiring incision, when accessible through the perinæum. Anterior strictures divided internally were rarely accompanied by unfavorable symptoms when the urine was made to escape by a perineal orifice. Eighthly, divulsion was unnecessary in the bulbous portion of the urethra, and was always dangerous, rude, and purely mechanical, requiring no surgical skill. Ninthly, the replacement of the term urethral fever by that of urinary fever was not a happy one. Urethral fever could often be proved to be a vaso-motor disturbance of reflex origin and not due to absorption of urine through a solution of continuity of the mucous membrane. Tenthly, in its results, thorough dilatation compared favorably with urethrotomy. An absolutely radical disappearance of a narrow stricture was of the rarest occurrence. In strictures of large calibre the results were more favorable by whichever method they were treated.

DR. WATSON, of Boston, related a case of stricture which had been operated upon by Dr. Cheever, who performed external urethrotomy. It was a tough fibrous stricture, extending from the bulbous portion of the urethra to the middle of the membranous portion. The stricture was incised and dilating instruments were used afterwards, the last one used being a No. 29. During nine years the case was not treated in any way, and at the expiration of that time a No. 27 was easily passed, showing that the cure remained permanent. The speaker recommended external urethrotomy and the making of one clean incision on the floor of the urethra, and perhaps one on the roof of the canal.

DR. POST, of Boston, said that many strictures of the deep urethra were not radically cured by an operation. It seemed rational that they should best be cured by external urethrotomy. If many were cured by internal urethrotomy, more still ought to be cured by the external operation, in which the sense of sight aided the sense of touch. The prob-

ability of cure must depend upon the care with which the operation was done. The threads used for sutures, if badly inserted, might cut and enlarge their passages, and contusions of the urethra might be made by bungling assistants with forceps, etc. After external urethrotomy the patients would mostly pass their urine by the normal urethra at the end of a week. The speaker then showed several charts upon which the temperature of patients having undergone external urethrotomy was traced. In most of them no rise of temperature was indicated. One patient with considerable fever after the operation experienced a fall of temperature to the normal when a urethral sound was passed, thus showing that it was not dangerous to pass a sound during urethral fever.

Dr. Arthur T. Cabot, of Boston, had seen two urethræ five weeks after the operation of divulsion had been done upon them. In one case the patient died three weeks after the operation, of Addison's disease. In both cases the strictures were pretty tight. After divulsion the sound, No. 30, passed easily, showing that the tissues were really broken. It seemed to him that divulsion was specially applicable to these soft strictures of the deep urethra, but that it was an improper operation in fibrous and inodular strictures.

The President highly recommended gradual dilatation as a means of cure. He said that any mode of treatment that added to the patient's comfort might still be used. He had seen the introduction into practice of the methods by dilating urethrotomy and by divulsion. After Dr. Otis's method of internal urethrotomy had become known, it was shortly so popular that a urethrotome might be seen sticking out of every hospital student's pocket. He thought that in the majority of cases soft stricture might be cured by gradual dilatation, if the patient and the doctor took time enough about it. It was to be regretted that the love of cutting had made the method of gradual dilatation fall into bad repute. The excellent results of gradual dilatation were shown by the report of a case that he had first seen in 1870 or 1871. The stricture had its origin in a mistake made by another practitioner, who had injected nitric acid into the patient's urethra instead of the solution he intended to use. When the speaker saw him there was a sausage-like mass of tissue, as hard as india-rubber, situated between the urethra and the rectum. It was a fibrous coarctation around the urethra, and only a No. 4 or a No. 5 bougie would pass. The opening was gradually enlarged to admit a No. 20 (English) *bougie à boule*, but it required two or three years to accomplish this. The patient, who was a boy, had continued to develop, and a No. 34 could now be passed into the bladder. He had not been laid up a day since the cure was effected, over seventeen years ago. Sometimes the speaker was not satisfied with the slowness of gradual dilatation. He would then make a superficial incision of the stricture with a small urethrotome and afterwards use a dilator. That method of procedure gave him much satisfaction.

Dr. Watson thought that the president had underestimated the value in which gradual dilatation was held by genito-urinary surgeons generally. As for himself, he employed dilatation ten times where he employed urethrotomy once.

Dr. Keyes did not think that Harrison's explanation of the formation of fibrous or inodular tissue was the only correct one. He thought that, over and above the chemical element in the formation of a stricture, there was also an irritative element. In follicular abscess of the urethra the urine was in contact with the seat of inflammation, yet often no inodular tissue was formed. He would not absolutely condemn divulsion ; he thought that it was still defensible in certain cases of soft stricture. In one instance, while performing urethrotomy, he had incised the stricture so thoroughly that the only tissue left uncut was the skin of the penis. The patient disobeyed orders and passed his urine without the use of the catheter, producing thereby an infiltration of urine which was cured without suppuration by multiple incisions. Surgery had made so little progress in the treatment of deep urethral strictures that it was to be hoped that the procedure of cutting out the inodular tissue and replacing it by three-fourths of an inch of somebody else's mucous membrane would be successful. Sometimes much difficulty was experienced in passing an instrument after external urethrotomy. In one case which the speaker had seen operated upon, the perineum was incised and a large sound was passed through the urethra to the bladder, but afterwards no instrument whatever could be passed, and a fistula formed at the seat of operation. This operation had to be repeated in three or four weeks, when the perineal fistula closed. It was then found that the obstacle to the passage of a sound

consisted in a fold or mucous structure upon the roof of the canal, and his custom now was never to open the urethra without feeling along the roof to see that no such fold or structure existed; if one was found, it was incised.

Dr. Bryson reported a case showing the effects of urethrotomy and of divulsion on the same urethra, which was the seat of two strictures. The first stricture was situated at the distance of two inches and a half from the meatus; the second, which would admit a No. 12 French, was in the bulbous portion of the urethra. The first was cut with an Otis's urethrotome, with anæsthesia: the other one was divulsed. After two years the patient came back, when it was found that the first stricture had remained cured, while the second had recontracted. For two months the patient had been passing his urine through fistulæ, one of which opened near the umbilicus. This did not give escape to the urine in a periodical or regular manner, as the normal urethra would, but, on the contrary, the urine flowed from it whenever there was any to flow. The diaphragm-like stricture on the roof and floor of the canal was divided, but the patient died subsequently from nephritic complications. As to the question, Did dilatation ever radically cure deep urethral stricture? he believed it did, and that there were cases in which not only was the stricture got rid of, but the mucous membrane was so modified that the cure was radical. If the speaker cut a stricture, it was done invariably with the intention of dilating it afterwards. In regard to the question, Did electrolysis ever cure deep urethral stricture? he said that the electrolytic action might stimulate the parts to aid dilatation. Did perineal urethrotomy ever cure stricture? It certainly did, as Dr. Keyes's cases showed. He believed that the excision of cicatricial tissue should be resorted to, and that the idea of urine-leakage as the origin of stricture led also to that conclusion.

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*PHYSIOLOGICAL ACTION OF ANTIPYRIN.*

In the *British Medical Journal* for June 1, 1889, Drs. Batten and Bokenham publish an experimental essay from the laboratory of Dr. Lauder Brunton, as to the physiological action of antipyrin. They summarize their conclusions as follows: The main action of antipyrin, if not its sole action, is due directly or indirectly to its influence on the nervous system. It appears to act on all parts of it, mainly on the spinal cord, but also on the brain and motor nerves. They have not yet succeeded in localizing the tracts of the spinal cord, which are especially affected by antipyrin, but if it is fair to compare the symptoms produced by the drug with those the result of disease, then it would seem that the localization of the action of antipyrin is fairly obvious. The symptoms in question bear a very strong resemblance to those of lateral sclerosis, and the authors, therefore, think that the action of the drug may be localized in the lateral columns of the cord. For instance, in guinea-pigs and a cat, they found spastic rigidity of the hind limbs, and in all animals experimented upon rigidity formed a marked symptom. Further, in the first-mentioned animals, this symptom appeared to come on with any attempt to use the limbs, just as is the case with a patient with lateral sclerosis.

The excess of myotatic irritability is also very marked, the slightest tap being sufficient to evoke violent muscular contractions, and, in extreme cases, to cause clonic spasms of the whole body. In one experiment phenomena exactly similar to those of ankle clonus were obtained.

In all cases the contrast between the effect of painful stimuli and stimuli such as the slightest taps, or even the vibrations produced by walking about the room, was most marked, the former producing less effect than in a normal animal, while the latter caused the violent spasmodic movements already mentioned.

The localization of the action of drugs on the different tracts of the spinal cord appears to be a field of research in which, as yet, little has been done, and is one that gives promise of very interesting and useful results. In the present instance, the effects of the drug (antipyrin) are so transient, seldom extending over more than a few hours, and the recovery is so complete, that pathological results demonstrable by the microscope could hardly be expected. It is rendered more difficult from the fact that doses sufficient to cause death produce other symptoms not referable to the lateral columns alone.

Up to the present, the only instances in which definite changes have been found are the results of Von Tschisch, who, by using certain drugs, was able to show vacuolation of the cells of certain tracts of the nervous system. It is true that in cases of ergotism, caused by the continual consumption of rye bread containing ergot, there has been ob-

served sclerosis of the postero-lateral columns, with corresponding symptoms during life; but to what extent this can be attributed to the action of the drug alone is uncertain, as other influences (famine, etc.) were at the same time at work, and similar results have not been obtained by the prolonged administration of the pure drug.

With the haloid derivatives of the benzene group, Brunton and Cash have observed symptoms showing the brain and spinal cord to be affected, and "giving rise to general tremors on movement resembling that observed in disseminated sclerosis." Sometimes, too, the tremor was observed independently of movement. The same two observers also found that amido-benzene caused symptoms like locomotor ataxy in frogs. They made many attempts to produce the changes permanently, but the symptoms passed off after elimination of the drug.

Such is the present position of the subject. The importance of being able to localize the action of a drug to a special tract of tissue cannot be overestimated, and if further work should prove this to be possible it will go far to render the use of drugs in diseases of the nervous system a more rational proceeding.

As regards the action of antipyrin on the brain of mammals, but little can be said at present. From the rapid rhythmic movements noticed in many cases, and from the circus-movements sometimes observed, it may be concluded either that the motor centres themselves are involved, or that their inhibitory power is abolished.

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### *THE SURGICAL TREATMENT OF RETROVERSION OF THE UTERUS WITH ADHESIONS.*

At the meeting of the New York Academy of Medicine, held February 28, 1889, DR. WYLIE read a paper thus entitled (*New York Medical Journal*, May 25, 1889). He described a new method of shortening the round ligaments, and showed its applicability to a class of cases which had until lately been very troublesome to deal with,—where the uterus was held retroflexed by adhesions, but where the tubes and ovaries were not diseased. He believed, as he had maintained for many years, that displacements of the uterus were not of themselves necessarily the cause of disorder or pain. However, a diseased uterus was often put into a worse condition by displacements, especially flexion. Adhesions of themselves were not a disease, but an effort towards repair or shutting off diseased parts from the general cavity. They only became harmful when attached to diseased organs in a way which interfered with their circulation, or when they hampered other organs, such as the bowels, in their functional activities. Adhesions could be softened and stretched enough to release the intestines and relieve the endometritis commonly present in this class of cases; but since in nine-tenths of all cases of retroversion with adhesions there was also pyosalpinx, laparotomy was usually called for before the patient could be cured. Any one who had opened the abdomen often enough to be familiar with the conditions constantly met with when adhesions had formed in any amount, would appreciate how much greater the probabilities of rational treatment were after the abdomen had been laid open. It was now not a more dangerous procedure than stretching out adhesions, when we took into account the liability to causing a fresh inflammation in tubes and ovaries already diseased which was present in the great majority of these cases. Forcibly breaking up adhesions without opening the abdomen was never to be resorted to. He would keep the patient quiet as long as the symptoms were acute and there was any rise of temperature. But otherwise, whenever a retroflexed uterus was found to be enlarged and sensitive, he would put the patient in the prone posture and push up the uterus slightly with the finger. If the adhesions were attached to the fundus, the fixation of the uterus would be much greater than if the adhesions were in the broad ligaments. Adhesions in the latter situation caused most of the displacements of the uterus. In mild cases he would begin treatment by packing in pledgets of boro-glyceride cotton to restore the uterus to its position by securing drainage, dilating the cervix, and curetting the endometrium, according as the case seemed to demand; but if these failed, he would then make an incision and find out what he had to deal with. If with the patient under the influence of ether he found the uterus freely movable and the tubes healthy, he considered Alexander's operation not unlikely to do good, but such cases were not the majority of those that were met with. By stretching the adhesions the position of the uterus could not really be restored, since the adhesions were in no case broken up, and would in time return to their former state of tension. When ordinary treatment failed to relieve, and where the symptoms were such as to demand measures for relief, he pro-

ceeded at once to perform laparotomy, look over the contents of the pelvic cavity, break up all adhesions, bring the uterus forward and shorten the round ligaments so as to retain it upright, and remove diseased tubes and ovaries, if necessary, as was so often the case. At one time he had shortened the round ligaments by cutting out a portion of their length and reuniting their ends inside the abdomen; but a far better device, which he now used exclusively, was to scrape a suitable length of the ligament raw and then fold it on itself at this point and tie it together. Healing took place rapidly and firmly after this procedure, and the ligament was of course permanently shortened. A large Albert Smith pessary was then used to keep the uterus in its new position while healing went on.

Dr. B. F. Baer, of Philadelphia, present by invitation, was not prepared to agree with Dr. Wylie as to the pathology of displacements, and still held to the belief that displacements of the uterus had some share in bringing about its diseases; still his belief was not so strong as it had been, and he might in the future abandon it entirely. And still no one would suppose an organ in its normal position which was upside-down. All would agree that our present approved therapeutical measures were such as tended to restore the displaced uterus to its position, and even Dr. Wylie employed these. He believed with him most emphatically that it was a matter of the greatest importance to restore to mobility and upright position a uterus fixed by adhesions in retroflexion. Still he thought that in a large number of cases this could be done through the vagina by ordinary methods, including the use of the pessary. The interference with circulation and the pressure on nerve ends must be a part of the condition needing relief in uterine displacements, being directly due to that displacement. He entirely concurred with the reader as to the advantages of the new operation, and believed it a scientific and effective method. He could go further than Dr. Wylie in his estimate of its value, since he regarded retroflexion and displacement as causes of disease. He believed laparotomy justified in many cases for the sole purpose of shortening the ligaments. He had found the round ligaments very hard to find externally sometimes. He had lately operated in a case of retroflexion in which there were no adhesions, but in which all ordinary treatment (including the use of a pessary) had not availed to relieve the malposition. The tubes and ovaries were healthy. After opening the abdomen he had brought the uterus forward, but not without difficulty. In one-tenth of the cases the shortening of the round ligaments after a laparotomy would of itself be found useful. In nine-tenths there were likely to be diseased tubes and ovaries, besides adhesions. In either case laparotomy was justifiable. The danger of hernia was less than after Alexander's operation, and, as none of the patients operated on had as yet died, it seemed to be quite as safe an operation.

Dr. Mundé had not tried Dr. Wylie's method. All who had treated retroflexion with adhesions had felt that laparotomy might in some cases be required to effect a cure. However, systematic and prolonged tamponing had undoubtedly cured some patients. He had thought that the amount of adhesion produced by Dr. Wylie's method would hardly be sufficient to stand the dragging on the ligament, but he might be mistaken on that point. He had performed Alexander's operation twenty-six times, and believed that it fulfilled its object in suitable cases. The objection to it was not that the round ligaments could not in most instances be found, but that they could not always be drawn out, or were too thin to be of service. It was not to be compared to hysterorrhaphy, since absolute mobility of the uterus was an indispensable condition for its performance. Recently he had had a case of complete prolapse of the uterus, and had decided to attempt a cure by shortening the round ligaments. He had accordingly found and exposed the ligament on one side, and had then made careful traction on it, remembering that it might be weak. The rupture of a large vein and a troublesome hemorrhage had first occurred. When he continued to pull on the ligament, it broke off short. He therefore did not attempt the procedure on the other side, but at once performed laparotomy and stitched the fundus of the uterus to the anterior abdominal wall. So far the result had been excellent. The cases in which hysterorrhaphy was indicated were those in which the adhesions were capable of being stretched, and the uterus could be lifted up into position by the finger pushing upon it through the posterior vaginal wall, or by an ordinary repositor, but returned to retroflexion as soon as these were withdrawn. Where the adhesions were very dense it might be impossible to liberate the uterus, ovaries, and tubes without a risk of tearing and injuring the latter. This had happened to him in one case, and he had been obliged to give

up the attempt. The patient fortunately had recovered. A possible danger from hysterorrhaphy seemed to him to be the slipping and incarceration of intestines between the uterus and bladder. In the two successful operations which he had performed, he had found the constant protrusion of the intestines during the operation to be a source of great annoyance, especially by their interfering with the introduction of the sutures through the broad ligaments and fundus. He thought it might be well to stitch the uterus up first and tie the sutures before inserting the other sutures in the abdominal wall. Many cases of backward displacement could be cured by tampons and pessaries. Hence the operation of hysterorrhaphy had a limited field of usefulness and applicability, and certainly was not devoid of danger. With regard to the significance of forward displacements, he believed that, although they were not of themselves the cause of uterine symptoms, they might yet in course of time produce symptoms indirectly by favoring engorgement. Then, too, the peritoneal surfaces brought into contact might become adherent. He therefore thought that even such displacements should be treated and cured if possible.

Dr. G. T. Harrison thought that retroflexion complicated by perimetric adhesions was emphatically a pathological state, and either by the specialist or the general practitioner must always be considered as one requiring relief. He must dissent from Dr. Wylie's opinion that backward displacement was in itself a matter of small concern. On the contrary, he thought that treatment was needed in every case in which it occurred before the woman could be well. He believed that a really normal position could not be obtained in these cases by shortening the round ligaments. The uterus naturally was freely movable, but the shortening of the round ligaments tended to produce anteflexion in place of retroflexion; it did not therefore restore normal position. One great objection to ventral fixation was its holding the uterus forward so as to interfere with the normal excursions of that organ. It made an exchange of one evil for another. However, Dr. Mundé had admitted that the operation was a recent one, and was still on trial. The speaker had no doubt that many of the women operated on in this way would afterwards have trouble with the bladder, and also during the progress of pregnancy and in delivery. It was certainly important that during the puerperal period the parturient woman should not suffer from over-distention of the bladder. It was a matter for congratulation that we had a means of dealing with almost all cases of retroflexion complicated with perimetric adhesions,—namely, massage applied by a modification of Brandt's method. The speaker had employed massage with excellent results without having read or being minutely acquainted with Brandt's directions. He could testify that pessaries did often cure retroflexion, although a whole year or five years might be required to get this result. He believed that it was the relaxation of the uterosacral ligaments which was the active and important element in the situation when the uterus was displaced backward, and, as Alexander's operation did not take this into account, he thought it lacking in real applicability to these cases.

Dr. A. F. Currier had seen Dr. Wylie do his operation and was familiar with his ideas in regard to it. As Dr. Mundé had said, no surgeons except Dr. Wylie and Dr. Baer had done the operation, and discussion of it by others could not be carried very far. The main question before the meeting related to the treatment of backward displacement of the uterus by any and all methods. The advantages of Dr. Wylie's operation, or its disadvantages, could not be directly discussed so soon as this after its introduction. We were bound to consider what results really followed backward displacements. In some patients certainly there were no symptoms produced; in others there were very marked symptoms, the result of engorgement, which demanded treatment. In a third class of cases, though there were symptoms of a certain sort, the chief result of the displacement was a general atrophic change in the uterine tissue, and this was incurable. Cures were undoubtedly effected by Alexander's operation, by Dr. Wylie's also, and by pessaries as well, and particularly in unmarried women. Another point but briefly alluded to by Dr. Wylie was the method of forcible replacement of the uterus when it was retroflexed and held by dense inelastic adhesions and shortenings of its ligaments. Retroflexion caused the layers of the broad ligament to become folded on each other, and if then an inflammatory process was set up, these folds would very soon adhere to each other. A question then arose as to what method could be used to break up these adhesions safely, so that their shortening and the resulting traction on the uterus might be brought to an end. It could certainly not

be done by the method called Schultze's operation, which he had employed, but without success. Whenever, with the hand on the abdomen, a sound in the uterus, and one finger in the rectum, he found that the layers of the broad ligament were adherent to each other, and that when the uterus had been restored to position by the sound it immediately sprang back as soon as the sound was withdrawn, he knew that forcible replacement must be a main procedure. As to the value of pessaries in uterine displacements, he believed with Dr. Harrison that they cured some cases. He had sometimes followed a case for two years after pessaries had been successfully used to replace a uterus, during which time, as the uterus retained its new position steadily, he had simply gradually reduced the size of the pessary until he was convinced that none whatever was needed. He thought that none but experienced and skilful operators should attempt so bloody an operation as the method by laparotomy might prove to be. He agreed with Dr. Mundé that in case of retroflexion with a perfectly movable uterus Alexander's operation was a good and useful one, but that if the uterus was adherent, either hysterorrhaphy or Dr. Wylie's new method was called for.

The CHAIRMAN remarked that it was recognized by all that some cases could not be cured by Alexander's operation, by pessaries, or by tampons. Moreover, Alexander's operation had been as fatal as laparotomy in the hands of the best operators, but not more than was to be expected. He did not think that the Alexander operation was backed by good surgical principles, and believed that, if pessaries failed to effect a cure or a long relief from symptoms, we should open the abdomen at once, and so make sure at least of what there was there needing treatment. At the same time, when pessaries gave relief for one or two years, that relief was for the time a cure. The reappearance of the disease in time did not prevent that. Pessaries did certainly often do this much. However, plenty of cases occurred where the adhesions needed to be broken up. As to hysterorrhaphy and the opinion that its result was incompatible with the uterus lying in its normal relations, and that it left a pathological condition present which would interfere with a normal pregnancy, he would say that he delivered a woman upon whom this operation had been done of a full-grown child, and had observed no symptoms of there being anything wrong.

DR. WYLIE professed himself ready to try other operations whenever a valuable addition to our resources should seem to have been made. He had only put forward his present method as one which would replace hysterorrhaphy to advantage in the same sort of cases. It did not cure uterine diseases, but it removed one of the complicating elements which interfered with the likelihood of a full recovery of health. Thus, we could treat chronic endometritis to better advantage after replacement of a retroverted uterus. As to treating this condition of perimetric adhesions by massage, he would say that he valued the method as preparatory to other treatment in uterine diseases, but in many cases it would prove insufficient. The treatment by pledgets soaked in boro-glyceride was to be tried, also dilatation of the cervix and drainage, also pessaries and massage. He refused to operate until this had been done faithfully; but, when all these had failed, the operative procedure became in order. When the broad ligament had folded on itself and become adherent in the way described by Dr. Currier, salpingitis was usually present, as laparotomies were constantly showing. Here, too, when general treatment had failed, laparotomy gave an opportunity to remove the diseased appendages, besides breaking up adhesions and allowing the uterus to regain mobility, which he regarded as of more importance than position. Atrophic conditions he did not expect to cure. He only brought the uterus far enough forward to bring it about that, in making exertions or in efforts at stool, pressure should come upon the top of the uterus and not upon its anterior side.

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### *THE INFLUENCE OF THE PHOSPHATE OF SODIUM ON THE EXCRETION OF URIC ACID.*

DR. A. HAIG read a paper with this title before the Royal Medical and Chirurgical Society at the meeting, which was held Tuesday, May 28, 1889 (*British Medical Journal*, June 1, 1889). He said that pure phosphate of sodium had long been known to be a solvent of uric acid, and he had pointed out that it increased the excretion of that substance. But all specimens of sodii phosphas (British Pharmacopœia) did not act equally well, and some caused little or no plus excretion of uric acid, and might even cause joint pains or precipitate an attack of gout. Results of analysis of several specimens of the salt were given, showing that it was gen-

erally mixed with a small percentage of sulphate of sodium. The excretion of uric acid under the pure phosphate ($Na_2HPO_4$) was shown, where there was a plus excretion of uric acid the whole time the salt was taken. This phosphate was made by the careful combination of sodium hydrate and phosphoric acid. The pure phosphate was then combined with fifteen per cent. of sulphate, and it was shown that this mixture did not cause plus excretion of uric acid, and the notes showed that it caused very marked pains in the joints, due probably to retention of uric acid in them. It was also mentioned that if a little dilute phosphoric acid was mixed with the pure phosphate in solution, it then did not cause plus excretion of uric acid; but if a little bicarbonate of sodium was mixed with it instead, the plus excretion was well marked. From these facts it was inferred that, while the pure phosphate of sodium ($Na_2HPO_4$) caused a plus excretion of uric acid, its action might be hindered or prevented by admixture with mineral acids or their salts outside the body, or by meeting with much acid in the intestines or elsewhere in the body. It was suggested that these acids or salts might take alkali from the phosphate $Na_2HPO_4$, and convert it more or less into the acid phosphate $NaH_2PO_4$, thus destroying its power of increasing the excretion of uric acid. And as some change of this kind might occur during crystallization, all specimens of the pure phosphate did not act equally well; but the addition of a little bicarbonate of sodium to each dose was generally sufficient to insure a satisfactory excretion of uric acid. The phosphate was not likely to be of use in acute gout, because the acidity in this disease was very high; but it had appeared to the writer to be of considerable value in the mental depression of uric acid in which the acidity was low and falling. Where the phosphate was sufficiently powerful it had some advantages over salicylate of sodium, with which its action was contrasted.

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### *DIABETES.*

According to the Paris correspondent of the *Lancet*, June 8, 1889, DR. WORMS introduced at the Academy of Medicine a discussion on that most important question,—the nature and treatment of diabetes. All the opinions and theories already known have been expressed at the tribune. According to Dr. Worms, diabetes is not a disease *per se*, but a symptom. He thinks that no exclusive theory whatever can explain the real nature of diabetes. "It is a personal resultant of hereditary pathological convergencies or of others infinitely complex." He had closely observed forty-one diabetic patients for a long series of years, and he noticed that thirst, polyuria, emaciation, and alteration of the teeth were often found wanting during the whole duration of the malady. Sugar was, of course, found in variable quantity, and that independently of all digression from the scale of diet or of any other appreciable cause. He therefore does not think it necessary to class diabetic subjects in distinct categories by only taking into account the average quantity of sugar found in the urine after a few analyses. As regards the treatment, it is all-important to maintain in the highest degree the vital energy and the integrity of the digestive functions. The diet he adopted was that prescribed by the late Professor Bouchardat, which has become classic; but in certain cases, when there is a diminution of the quantity of the urinary sugar, the scale of diet may be departed from, and even a little bread may be allowed. Dr. Worms does not approve of the employment of saccharin for sweetening certain aliments of diabetic subjects, as it appeared to cause disgust and to act injuriously on the digestive functions, which it is most important to protect. As regards drugs, he still gives the preference to the sulphate of quinine, which he prescribes in doses of from 20 to 30 centigrammes (3 to 4½ grs.), to be continued for a long time. In certain cases he found arsenic and opium useful. He thought that antipyrin was of too recent introduction in the therapeutics of diabetes to pronounce definitely on it. Bromide of potassium, which he also frequently employed, gave him only unsatisfactory results. Dr. Dujardin-Beaumetz combated some of the opinions expressed by Dr. Worms at the previous meeting of the Academy. According to him, and contrary to the views advanced by his colleague, thirst, polyuria, and an exaggerated appetite are phenomena which almost constantly accompany diabetes; it is not a symptom, as asserted by Dr. Worms, but a veritable malady, which affects the entire economy. As regards diet, he entirely proscribed milk, lactose being one of the sugars which most rapidly passes into the urine. He is in favor of boiled potatoes, and prefers the soja to the gluten bread. He advised his patients to eat all sorts of fatty substances, and, furthermore, saw no objection whatever to

adding saccharin to their tea or coffee in the proportion of 10 centigrammes to each cup, which would give them the delusion that it was sugar. In respect to drugs, one might employ with advantage arsenic, the salts of lithin, the sulphate of quinine, etc.—in fact, all substances which have an elective action on the spine and on the bulb. Finally, muscular exercise must not be forgotten. Thanks to these means, the diabetic subject might be placed in excellent condition to combat the causes of debility and of organic decay to which he is so frequently exposed. Professor Germain Sée, who followed in the debate, did not believe that the current theories which have been advanced to explain the appearance of diabetes are proof against criticism. M. Sée has established, by a series of experiments on patients in his ward, that their urine normally contained glucose, but in such a small quantity that it could not be revealed by the ordinary reagents. By the aid of a new reagent, however,—the phénylhydrazine,—M. Sée has been enabled to establish the presence of sugar in healthy urine even when there are only 33 milligrammes to 100 grammes of urine. In the normal condition, for the sugar to pass into the urine, one must ingest 250 grammes of cane sugar or 200 grammes of sugar of milk. In diabetic subjects, on the contrary, the smallest quantity of these sugars is found again in the urine, and augments the pre-existing pathological figure. In all cases the sugars ingested in large doses act at the same time as diuretics. Besides sugar, M. Sée has found in normal urine, by divers reagents, the chloride of benzole, naphthol *a*, furfurol, constant quantities of the hydrate of carbon similar to the group of dextrines and approaching the group of glucose. Their transformation in this last group is possible, and this would explain the establishment of glycosuria. The formation of glucose is also a normal phenomenon which results from the transformation of the glycogenic matter of the liver into grape sugar. This glycogenic matter is developed not only at the expense of the amylo-saccharin substances introduced with the aliments, but also at the expense of the albuminates proceeding from without or from within. If, therefore, sugar in the urine is normal, and if the glycogenic matter in the liver and in the muscles is normal, glycosuria will only be an exaggeration of the normal genesis. From normal glycosuria and diabetes there is but one step; the two states are derived from physiology, and are connected. This is why diabetes has no distinct species; it is one, always the same, and varies only by the conditions of its development in the rich and the poor, in adults and in children. The poor and children are affected with a diabetes of misery, the others of luxury. The origin of diabetes is in the circulation of the liver excited by the vasomotor system of this organ, which system is under the reflex influence of an irritation from the medulla oblongata and from nearly all the nervous centres. The hyperactivity of the liver leads to a neoformation of glycogenic matter or a rapid exaggerated transformation of this substance into sugar. In the treatment of diabetes, Professor Sée is in favor of the absolute exclusion of milk. He advises fatty aliments, the crumb of bread, tea, coffee, exercise, and, as regards drugs, opium and antipyrin. Dr. Robin declared that he agreed entirely with Professor Sée regarding the glycogeny and the azoturia in the physiological state.

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### *THE ETIOLOGY OF FIBRINOUS PNEUMONIA.*

At the meeting of the Medical Society of the County of New York, held March 25, 1889, Dr. August Seibert read a paper with this title, devoted to the evidences of an infectious element in the causation of ordinary pneumonia (*New York Medical Journal*, May 25, 1889). It was only within twenty years, and mainly within ten years, past that the invasion and growth of infectious material in the body had been looked to for an explanation of epidemic and endemic appearances of pneumonia, and of the occasional occurrence of purulent complications and of the form of pneumonia called migratory. The so-called one-day pneumonia, with its fall of temperature twenty-four hours after the initial chill, while dulness, bronchial respiration, and rusty sputa were observable several days longer, had been observed only since 1877, and had furnished further material for consideration and for doubt that a simple inflammation due to exposure to cold was all that was present in such cases. Then statistics concerning the relative frequency of pneumonia among soldiers when in the field or in barracks, among sailors, among those who went on Arctic expeditions, and finally among the inmates of prisons, convents, and boarding-schools, had appeared, all coinciding in showing that persons leading an outdoor life, exposed often to bad weather, were in far less danger of being attacked by pneumonia than those spending most of their

time indoors. These statistics had, in fact, shown that a liability to pneumonia increased in exact proportion to the time spent in closed rooms. Investigations had shown pneumonia to be most common among aged people and young children, and not young adults, as had always been supposed. In a certain epidemic of pneumonia among children under 5 years of age it had appeared that two-thirds of them had not been out of doors for a long time previous to their illness.

The endemic and epidemic appearances of pneumonia had attracted attention since 1875, when Kühn first published an essay on an epidemic in a Bavarian prison, in which most of the cases presented the pleuro-pneumonic type, often complicated by pericarditis and typhoid cerebral symptoms. Müller, in 1877, had reported the occurrence of pneumonia in three out of four inhabitants of a small house and in two relatives who had been visiting there; Ritter, in five persons, who inhabited a single house, within five days and in two visitors there; Bielinski, in nine of ten persons living in a house with only two rooms, within two weeks; Daly, in six of eight persons living in one house.

Attempts to produce pneumonia by forcing dry cold air into the lungs of animals had always failed. Efforts to determine the weather influences bearing on the frequency of the disease had been made, and led to the fact that pneumonia was most prevalent in weather which favored catarrhal inflammations of the air-passages. Low and falling temperature, high and rising humidity, and high winds were each alone capable of furnishing this influence. In Davos, with its cold dry climate, pneumonia never appeared until the melting of the snow in the spring. Taking up the direct evidences of the presence of a bacillus in pneumonia, the speaker quoted Sänger as having found Friedländer's pneumococcus in the lungs in all his fatal cases, as well as in the organs suffering from complicating inflammations (meningitis, pleurisy, endocarditis, nephritis, and pericarditis). Emmerich, after an epidemic in a prison in which one hundred and sixty-one out of eleven hundred and fifty inmates had been attacked and forty-six had died, had found this coccus between the ceilings and beneath the floors in great quantities, imbedded in very moist *débris* that had been used to fill up the spaces. He had inoculated thirty-two mice with a cultivation made from some of these germs and injected into the lung-tissue, and all had died, pronounced hepatization being found in each case. Cases of wandering pneumonia and of central pneumonia (beginning in numerous small pneumonic areas) were best explained on the theory of infection.

The adherents of the taking-cold theory had two distinct ideas; the local action of cold penetrating the lung through the ribs was believed by some to cause the inflammatory process; others believed a cooling of the whole surface of the body caused pneumonia in a reflex way by producing a sudden hyperæmia of the internal organs. Harm did not occur after the use of Esmarch's bandage, however, in amputation of the thigh, although sudden hyperæmia must be produced; nor did it follow the use of the cold bath. The cases of pneumonia lasting one and two days were perfectly explainable on the theory of infection; so were the epidemic and endemic cases. The latter also furnished evidence that the germs causing the disease were most apt to take effect in cold, moist weather. The fact that in these epidemics neighboring villages or dwellings escaped showed that the weather condition was not alone the cause. Investigations by Emmerich, Mendelssohn, Darlington, and many others had shown that Friedländer's pneumococcus throve best in warm, moist, and dirty rooms and houses. Daily scrubbing, as was customary in many prisons, favored this condition, since much of the material not removed from cracks and beneath the flooring was kept moist. The speaker believed that cold, moist weather so generally occurring when pneumonia was prevalent acted in a causative way only by keeping the very young and aged persons indoors entirely, and by preventing the ventilation of sleeping apartments. Confinement in close rooms of itself favored the development of bronchial catarrh, and this in turn made the lodgement of pneumonic germs much easier. The coughing also tended to force the pneumococci into the alveoli. As we might expect from this now well-established fact, pneumonia often complicated diseases in which the pulmonary mucous membrane was in a state of congestion, as typhoid fever, measles, and whooping-cough. On the other hand, pneumonia seldom complicated diseases such as scarlatina, diphtheria, and meningitis, in which the pulmonary mucous membrane was not so affected. The depression of the bodily forces was quite as great in the latter diseases.

The speaker closed by reiterating his belief that cold, moist, and windy weather was efficient as a cause of pneumonia, in a ma-

jority of cases, by its causing those who lived in moist and dirty houses to close the windows and doors, and so at once encourage the development of catarrhal inflammation in their bronchi and the multiplication of Friedländer's pneumococcus in the air they were to breathe, unmixed with outside air, for hours to come. His reason for the greater prevalence of pneumonia in April and May, as compared with October and November, when the temperature was similar, was that people feared the moist air of spring, closed their windows, and breathed air contaminated (in the case of filthy dwellings) by the accumulated dirt and moisture of the winter.

Dr. Francis Delafield remarked that no department of our knowledge was so uncertain as that of the causation of disease. If any advance was being made in this direction, it was that we were no longer as once willing to accept any statement that might be made regarding the etiology of a disease. We looked for well-connected data preceding any conclusion offered, and until such appeared were willing to admit our ignorance. This was especially true of pneumonia. It was true that for many years no efforts had been made to discover its cause or causes which could very well meet with success; what work had been done was not good work. Still, even yet we had arrived at no certainty, simply from our continuing to lack sufficient knowledge. It was idle to say that we knew the cause. What we did know was that pneumonia seemed to belong to a class of inflammations due to infection, whose progress was accompanied by the growth of pathogenic bacteria. We seemed to know that to cause this growth three factors were essential,—the pathogenic bacteria themselves, some exciting cause of inflammation, and a proper soil in the body of the person attacked. It was curious to observe how at different times and in different places one or the other of these three factors would take a more prominent share in producing the single result of pneumonic inflammation. Sometimes the bacteria were evidently the leading cause, as when people were much in the house and the house was a dirty one. In other cases the bacteria were abundantly present in the air breathed, yet no disease resulted unless some other exciting cause of inflammation came into play. Or, again, crowded quarters and foul air were without effect, except where a susceptibility was somehow developed or present in the individual. Then, still further, we must admit that our real knowledge concerning the bacteriology of pneumonia was now just in its infancy. As far as we were now advanced, it was probable that several bacteria were capable of causing the disease, and we were unable to classify all that were at times associated with fibrinous pneumonia. Until this was worked out (a matter of much time and labor), we had not gone far towards ultimate knowledge in the subject.

Everybody must have noticed the remarkable differences in the constitutional symptoms met with, some patients throughout seeming to have only a local inflammation, others very early appearing as if suffering from general infection in addition to the disease in the lung. This variation was one of the most characteristic features of the disease. We saw the same thing in peritonitis. In the present state of our knowledge such papers as the one Dr. Seibert had just read, bringing together as it did large collections of facts, were very valuable. At the same time it was wise to remember how ignorant we were of the facts which could give us any intelligent idea as to the cause of the disease.

Dr. L. Emmett Holt said that he had very little to add. For any one to enter this field of investigation it was eminently necessary that he should come prepared with a large array of facts and a large number of well-recorded and systematically-arranged cases. One feature of the disease he wished to allude to as a very noticeable one. This was the very great difference met with in individuals with respect to a predisposition to contract the disease after exposure to its exciting causes. Everything in the manner of living or the inherited tendencies which affected the general state of the constitution seemed also to affect the liability of that person to contract pneumonia. We saw similar differences, but no more marked ones, in children, in respect to the ease with which they could be inoculated by the vaccine virus or by the contagious element of measles and scarlatina. He believed one reason why pneumonia was more common in spring was because the constitutions of the less vigorous were then exhausted to some extent by the recent long continuance of cold weather and the changed conditions of living thereby made necessary. We most often saw malarial disease, and even so simple and functional a disease as chorea, appearing in the spring. It only showed that the causes which predisposed had been more active during the winter.

His experience also pointed strongly towards the fact that a predisposition to the disease was often the result of the character and cleanliness of the house and neighborhood where the patient resided. The prevalence of the disease in tenement-houses did not seem to indicate that pneumonia was largely due to conditions existing in-doors, especially where these included dampness and bad ventilation.

Abortive types of pneumonia were not infrequent, and this fact was quite in harmony with the theory of the infectious nature of the disease. Such cases of typhoid fever had often been described, and in a recent epidemic of scarlatina in the New York Infant Asylum in which over one hundred cases occurred, instances had been seen in which the rash lasted only half a day, and several in which no temperature above 100° F. was observed. The speaker thought it very probable that many of those obscure forms of illness in which there were high temperature only for a day or two, some cough, and the physical signs of hyperæmia of the lung, were in reality abortive cases of pneumonia.

Dr. A. F. Currier remarked that, without wishing to derogate from the value of the paper, he must confess he had felt relieved when Dr. Delafield insisted that other points must come under our consideration besides bacteria. As students of truth as a whole we should always remember that, while new knowledge was always important, the old landmarks must not be forgotten. The conclusions reached by good observers in times past could not be entirely incorrect. According to Dr. Seibert's conclusion, coachmen, letter-carriers, and truck-drivers might be supposed prepared against the disease, considering their out-door occupation, whereas, as a fact, they were very liable to it and often died of it. Here evidently cold and moisture and the susceptibility of the individual were the primary and efficient elements in the causation, as was so long recognized in days before the septic element was taken account of. As Dr. Delafield had said, the questions respecting the etiology of this disease were not settled even by those who were making careful and wide observations and subjecting them to close analysis. Others must wait until definite conclusions could be reached.

Dr. John Messenger would emphasize Dr. Delafield's remarks as to the part played by bacteria in the etiology. The predisposition seemed to him to have much to do in this direction. Thus the coachmen and draymen spoken of by Dr. Seibert commonly had systems debilitated by their habits and their general mode of life. They indulged in beer or whiskey, slept in close apartments, bathed little, and paid little attention to the disposal of the excreta of their bodies. The form of pneumonia known as croupous or fibrinous he had treated with best success by the same means which he employed in acute rheumatism. He had seen cases of this sort in which uric acid was present in the urine in large amount. But, last of all, it remained to be said that we did not know very much about it.

Dr. Seibert said that he had not meant to say that everything had been done which could be done in giving us correct and final knowledge in the subject of the etiology of pneumonia. We had not learned all there was to know about antiseptic methods in surgery, but in both these directions we had gone far enough to recognize the important part played by dirt in causing inflammatory processes in wounds and in the lungs. This was the practical and important part of his paper. It was a plea for asepsis in preventive medicine, as applied to pneumonia. Having made this first, he would then ask in what bodily soil the bacteria would grow if they had entrance. Physicians, reversing this order, spoke too much of predispositions instead of saying to the tenants of some filthy abode, "Clean this room," or else making them leave it at once and finally. The fact that pneumonia even occasionally occurred as an epidemic was enough to prove its infectious nature. It would not alter that fact whether the germ proved to be Friedländer's, Fraenkel's, or Sternberg's pneumococcus. If a child of his own took pneumonia, he would first of all see that no one slept again in the room it had been sleeping in, and would not have it used again as a living-room until the floors and walls had been renovated and a clean carpet put down. Acute rheumatism he had long considered an infectious disease, and had observed it most in dirty, damp, and warm tenement-houses. Infants in a tenement family he had seen die of it, and the father some months later. Its being best treated with salicylate of sodium was quite in line with the idea of there being a bacterium in the case.

He would have it recognized that the germs of pneumonia were in houses and not out-doors: he would have children taught to go out-doors in all weathers; he would have weak and anæmic children sent, not to school or

into a store, but into any out-door trade. He had for years past treated pneumonia with cold air; he never allowed a fire in the room while the patient slept; if the out-door air was cold, so much the better; when the crisis of the disease came, he closed the windows partially, and during convalescence had the patient in a sunny room with pure air at a moderate temperature.

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*PHENACETIN IN THE TREATMENT OF NEURALGIA.*

According to Dr. Ott (*Zeitschrift für Therapie*, May 15, 1889), phenacetin, in doses of from 7½ to 75 grains daily, possesses most marked value, according to his experience, in the treatment of neuralgia of peripheral origin; while it is without action in treatment of neuralgia dependent upon disease of the brain or spinal cord. Dr. Ott administers the remedy in the form of a powder enclosed in capsules, in doses of 7½ grains, and has never had occasion to use larger amounts. One or two of these powders, given at intervals of an hour, are found to succeed easily in arresting suffering. His most brilliant results are stated to have been obtained through the use of phenacetin in hemicrania, and in occipital neuralgia, which so frequently occurs in women during the menstrual period, or in men as consequence of marked hemorrhoidal congestion. In one case of hemicrania he had marked success even after the patient had before taken antifebrin without avail. In pure trigeminal neuralgia it only produces transient relief, so that final resort must be had to other remedies, such as quinine, salicyl, or electricity. He reports two cases of cardialgia in which there was marked relief, as well as three cases of intercostal neuralgia. On the other hand, it produced no effect in an extremely severe case of sciatica, even though the dose was increased to 75 grains in twenty-four hours. Unfortunately, the economy appears to be accustomed to the use of phenacetin, and, after continued employment, its analgesic properties are lost.

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*THE TREATMENT OF DIARRHŒA IN PHTHISIS.*

Dr. Polyák, of Görbersdorf, gives in the *Orvosi Hetilap* the results of some trials he has made of two recently suggested remedies in the diarrhœa of phthisis,—viz., silicate of magnesia in the form of talc which has been recommended by Debove, and lactic acid recommended by Drs. Sézary and Aune. About eight ounces of talc were well shaken up in a pint of milk, and this, or even a larger quantity, was given daily. As a rule, it arrested the diarrhœa after having been used for a couple of days, but if it was left off the diarrhœa returned. It was found, however, that patients liked the milk mixed with talc even better than ordinary milk, but it could not be taken for more than six or seven days, as after that time complaint was made of a troublesome feeling of oppression in the stomach and bowels. Dr. Polyák thinks it quite impossible that long-continued use of talc can heal intestinal ulcers. Lactic acid proved in his hands a much more satisfactory remedy. The initial dose employed was 30 grains per diem in four ounces of water; this was increased subsequently, but not more than 75 grains per diem were given. On the third day the diarrhœa and the pain were generally arrested, and during the next day or two the stools assumed their ordinary character. It was found advisable to continue to give small doses for some time longer. The patients bore the treatment well; it produced no diminution of appetite, and, unless continued for a long time, gave rise to no disagreeable symptoms. Dr. Polyák thinks it possible that even ulcers of the intestines may be healed by this means.—*Lancet*, May 18, 1889.

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*MECHANISM OF THE THIRD STAGE OF LABOR.*

At the meeting of the Glasgow Obstetrical and Gynæcological Society, held January 23, 1889, in referring to various views which had been advanced concerning the third stage of labor, Dr. H. St. Clair Gray said he had always found a post-placental clot present (*British Medical Journal*, May 18, 1889). When the cord was tied, the blood was still being carried to the placenta by the curling arteries, so that the placenta and cord became gorged with blood, and rupture took place at the weakest portion of the tract, which was at the utero-placental tissue lying between the placenta and uterus, or in the placental sinuses, probably in the former, which was composed of single-walled cells. The placenta was thus separated at its centre, and an ordinary uterine contraction was sufficient to separate the rest. The presentation of the placenta by its edge or centre depended on

its site of attachment. In one hundred consecutive cases he tied the cord at once. The placenta was expelled spontaneously in ten minutes in all of them. In another one hundred cases, the cord was cut with sharp scissors and allowed to bleed. In all these cases the placenta had to be expressed. In this last series little or no clot was found. In twenty-five cases he introduced his hand after tying the cord, and found the placenta loose. In twenty-five cases, without tying the cord, he found the placenta attached. In twelve cases he had his finger on the placenta, and distinctly felt it bulge at the moment an assistant tied the cord. In seven cases of version performed on dead fœtuses he had found the placenta loose. The subplacental hæmatoma, therefore, played the most important part in the separation of the placenta, aided by the retraction of the placental site by the ordinary contraction of the uterus; thus, hemorrhage, to a slight extent, was a normal factor in labor.

In the discussion which followed, the Society showed itself unprepared to accept Dr. Gray's fundamental statement that the blood passed so rapidly from the maternal to the fœtal circulation. Reference was also made to the table in Dr. Barbour's paper, quoted from Champneys, which seemed to show there was little relation between the height of the placental insertion and its area of presentation.

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### *THE USE OF BELLADONNA AND CANNABIS INDICA BY THE RECTUM IN GYNÆCOLOGICAL PRACTICE.*

In the *Boston Medical and Surgical Journal* for May 23, 1889, Dr. J. W. Farlow calls attention to the value of employing the absorbing power of the rectum in different affections of the pelvic organs. The advantage of this method of treatment he finds to be especially dependent on the more perfect retention by the rectum of drugs than when they are introduced into the vagina. The remedies to which he especially refers as used in this manner are belladonna and cannabis indica. He states that belladonna has a sedative action on the uterus and pelvic contents, and relaxes rather than constipates the bowels. Its value in irritable conditions of the bladder and urethra is well known. This combination of qualities is called for in a very large number of women. Cannabis indica has somewhat similar properties, and especially for sensitive ovaries and in the various painful affections of those organs its use is often productive of much good. It has few equals in its power over nervous headaches such as women with pelvic trouble are subject to.

About the age of puberty there is frequent complaint of painful menstruation, with pelvic and general excitement, and often weakness from this after the flow has entirely ceased. Frequent micturition and headache are also very common at this time. If the excitement can be moderated, if the pelvic organs can be made less irritable, there will be less pain, less hemorrhage, less weakness, and consequently a much longer period of health between the catamenia. This Dr. Farlow believes may be accomplished through the rectal use of belladonna and cannabis indica, beginning a few days before the menstrual symptoms appear. So, also, tenderness of the ovaries, various symptoms which accompany the menopause, are often relieved by the same mode of treatment. Dr. Farlow generally orders ¼ grain each of extract of belladonna and extract of cannabis indica in a rectal suppository, to be used at night, and sometimes it is well to use one also in the morning after the bowels have moved. There are some patients who can tolerate only ⅛ grain of extract of belladonna, even by the rectum. To such smaller amounts should be given.

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### *QUININE IN PREGNANCY.*

At the meeting of the Glasgow Obstetrical and Gynæcological Society, held April 24, 1889, Dr. R. Park (*British Medical Journal*, May 25, 1889) read notes on the action of quinine in medicinal doses on the pregnant uterus, with an illustrative case. Mrs. C., aged 27, three years married, never pregnant, consulted him in August, 1886. He found her suffering from retroversion of the uterus with tender fundus. This was replaced without difficulty, and a Hodge pessary introduced, with immediate relief. She soon afterwards became pregnant. In August, 1887, when about five and a half months' pregnant, she was threatened with a miscarriage,—considerable flooding and rhythmic pains,—which subsided, however, on the administration of opium and small doses of liq. ergot. ammon., and on December 31 following she was delivered of a healthy female child. As to the cause of the hemorrhage, nothing could be elicited except that, three days previously, she had taken a

dose of quinine to relieve neuralgia. He considered that she must have taken from 10 to 15 grains, from the effects produced on the head. The patient herself stated that soon after the singing in her ears stopped she began to feel uneasy about the lower part of the abdomen. Dr. Park said that as the quinine produced such an effect in a dose within ordinary medicinal limits, it must, in smaller doses, have a distinct, though less obvious, action of the same kind. He believed that all tonics which acted on non-striated muscular fibre exerted their influence over the uterus, except when its walls were the seat of inflammatory hyperplasia.

Dr. M. Cameron stated that he had met with cases where he was inclined to attribute abortion to quinine.

Dr. G. A. Turner asked if the dose of quinine in Dr. Park's case had caused vomiting. He stated that while in practice abroad he had frequently used large doses of quinine in pregnant women, and had never seen any bad results.

Dr. A. Miller agreed pretty much with Dr. Atthill that those drugs mentioned by Dr. Park,—namely, ergot, savin, quinine, strychnine, etc., had very little effect in producing uterine contractions, even in the pregnant uterus, although he thought it not improbable that the quinine caused this threatened miscarriage.

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### *THE ACTION OF ASTRINGENTS.*

In an experimental inquiry upon the mode of action of astringents, Dr. R. Heinz, of Breslau (*Virch. Arch.*, 116, Hft. 2), finds that, as regards their property of contracting vessels, the minimum strength of solution necessary is—of corrosive sublimate .005 per cent.; of nitrate of silver, acetate of lead, and sulphate of zinc, .01 per cent.; of cupric sulphate, perchloride of iron, tannin and alum, .05 per cent.; while in respect to the degree of vascular contraction excited, they may be ranged in the following order: nitrate of silver; acetate of lead and sulphate of zinc; corrosive sublimate, cupric sulphate, perchloride of iron; tannin and alum. Upon the interesting question of the prevention of inflammation by the use of these substances, Heinz made many experiments on the mesentery of the frog. He found, in the first place, that when the exposed membrane was treated with such solutions, the leucocytes, although accumulating within the vessel along its walls, did not exude and collect outside the vessel, as in the ordinary experiment of mere exposure of the membrane, which is kept moist by salt solution. If a certain amount of inflammation were excited prior to the application of the astringent, the latter caused an immediate arrest of the process. That this was not due to the narrowing of the vessels was proved by using solutions of greater strength (*e.g.*, of tannin one-half per cent., alum two and a half per cent.), whereby dilatation of the vessels is caused. Still higher concentration of the solutions injure the tissues and excite inflammation; and yet, curiously enough, if the application of such be continued for a longer time, inflammatory action is held in check. Of two theories advanced to explain this property of astringents,—viz. (1) direct paralyzing effect on leucocytes, (2) change in the vessel walls,—Heinz adopts the latter, since the leucocytes show no evidence of loss of amœboid activity, while astringents possess the power of forming insoluble compounds with proteid substances. Moreover, nitrate of silver is well known to histologists to attack specially the cement-substance of endothelia, and this property may well operate in preventing the migration of leucocytes. The property of combining with albuminates also explains the action of astringents as caustics, and in causing coagulation, and also as more or less efficient bactericides.—*Lancet*, June 1, 1889.

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### *A NEW METHOD OF TREATMENT WITH CREASOTE.*

Dr. Schetelig writes in the *Pharmaceutische Post* for May 26, 1889, that he has been employing twenty- to thirty-per-cent. solutions of creasote in pure oil of cloves, injecting 16 minims into the subcutaneous tissue of the thigh or abdomen, and then removing the syringe from the canula, employing gentle massage ever the seat of injection, and then again injecting new amounts in the same locality. In this way he finds that he has been able to inject from four to twelve syringefuls of 16 minims without the patient experiencing any pain, or, in fact, any disagreeable consequences. He writes that he has employed this method of treatment for four months, and claims that his experience warrants the following conclusions:

*First.*—As regards harmlessness of large doses of creasote, when injected subcutaneously, giving from 16 to 25 minims daily for months at a time, and sometimes giving from

30 to 45 minims at one treatment, without noticing any accumulative action.

*Second.*—In fourteen cases the taste of creasote was noticed in the mouth of the patient, quite independent of the quantity injected. The intervals between the injections varied from fifteen minutes to one hour, and in no case was there any disturbance of digestion complained of.

*Third.*—Subcutaneous injections of creasote exert a marked antipyretic action. When a small quantity of creasote is introduced under the skin of the feverish phthisical patient, the temperature is reduced from two to three degrees, or more. Ordinarily, 16 to 25 minims is sufficient, although excessively febrile temperature requires a larger dose.

*Fourth.*—The author adds that guajokol injected subcutaneously possesses all the properties of creasote, although only one-third or one-fourth of the quantity of the former is required.

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### *NOVEL METHOD OF DETECTING A PERFORATION OF THE MEMBRANA TYMPANI.*

In the *Boston Medical and Surgical Journal* for May 30, 1889, DR. E. D. SPEAR calls attention to the following novel method of detecting a perforation of the membrana tympani:

While looking into the auditory canal in the ordinary manner, with speculum and mirror, hold a piece of clear, cold glass close to the speculum, have the patient do the "Valsalvian" experiment, and if a perforation exists the vapor of the breath will be condensed upon the glass and obscure the view.

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### *THE TREATMENT OF HERPES ZOSTER.*

In answer to a question propounded in a German dermatological journal as to the best method of cutting short herpes zoster—if indeed such a method really exists—DR. UNNA, of Hamburg, remarks that we must consider the treatment under two heads: firstly, when the vesicles have already formed, and the object is to prevent them suppurating; and, secondly, when the vesicles have not actually formed, and we wish to adopt a true abortive treatment, so as altogether to prevent their formation. In the first case the remedies to use are much the same as those which are employed for the purpose of preventing the papules of acne becoming pustular,—that is to say, for the abortive treatment of a boil. Here the most important remedy of all is sulphur, which can be applied in the form of a gelatinous paste of sulphate of zinc; other useful substances, which can be applied in the form of lotions containing spirit, are corrosive sublimate, iodoform, carbolic acid, and resorcine. For the true abortive treatment there is nothing like ichthyol mixed with water and painted over the part affected, or a strong paste of zinc and resorcine.—*Lancet*, May 18, 1889.

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### *RHUS AROMATICUS IN THE NOCTURNAL INCONTINENCE OF URINE IN CHILDREN.*

The use of this plant has been recently recommended by Max, Guinon, Burwensch, Descroizilles, and other physicians for the treatment of nocturnal incontinence of urine in children. In the *Gazette Hebdomadaire de Médecine et de Chirurgie* for May 17, 1889, DR. ELOY likewise recommends the use of this remedy in this affection, employing either the tincture of the bark or the tincture of the leaves. The former preparation is obtained by macerating 200 parts of the bark in 800 parts of alcohol, the dose being 20 to 50 drops daily, diluted with water. The second preparation is made by the extraction of 200 parts of the leaves with 800 parts of eighty-per-cent. alcohol, the dose being 15 to 60 drops daily, either taken at one time or at intervals, diluted with water.

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### *SULPHONAL IN MENTAL DISEASES.*

DR. LIBORIO LOJACONO, assistant in Professor L. Bianchi's clinic for mental diseases at Palermo, has recently reported the results of some experiments which he has made with sulphonal on patients suffering from different forms of insanity. The drug was always exhibited in a single dose in water or syrup, from 1 to 1½ grammes being given to women and lads in the evening, and 2½ grammes in the daytime. In men the evening dose was from 1½ to 2½ grammes. The physiological action of the drug began to show itself in half an hour at night and in an hour during the day. It produced no great effect on the respiration or on the pulse, though there was a considerable increase in the blood-pressure. Digestion and temperature were unaffected, while neither the sensibility nor the various reflexes were modified in any way. In only one case, a woman suffering from melan-

cholia, to whom large doses (2 to 3 and 4 grammes) were given three days in succession, did any unpleasant after-effects occur; she was troubled with sickness after meals and a feeling of prostration for one day. It was never necessary to increase the dose owing to patients becoming habituated to the drug, nor did it appear to have any cumulative action. The first effect observed was that the patients became quiet, and soon sat down or went to bed; this was shortly followed by sleep, which, in the daytime, was often light and easily broken, but at night was sound and natural. The effect was found to vary according to the strength of the dose and the time at which it was given. Thus, while 1 or 1½ grammes given during the day produced little effect, the same quantity exhibited at night produced sleep lasting from five to eight hours. Two grammes during the day induced broken sleep for a few hours, but at night made the patient sleep quietly the whole night through, and sometimes even the following night. In some patients suffering from insomnia a single dose of 2½ grammes given at night produced tranquil refreshing sleep for two, three, or more nights running. In no case did the drug fail in its effect, the largest quantity required having been 2½ grammes at night and 4 grammes in the day. In addition to its power of inducing sleep, the drug had a marked effect as a general sedative. In cases of acute maniacal or hysterical delirium and epileptiform convulsions, paroxysms were either prevented or greatly mitigated; in chronic forms of insanity the effect was much less marked.—*British Medical Journal*, June 1, 1889.

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### *THE PREMONITORY SYMPTOMS OF ALCOHOLIC PARALYSIS.*

Nothing helps us so much in the treatment of a disease, if it be of such a nature as to be capable of cure or amelioration, as an early recognition of the symptoms of its conception. This statement, true with regard to most affections, assumes additional significance when we have to treat a disease like alcoholic neuritis, which can be readily cured in its early stages by the simple withdrawal of the poison, without any special treatment, but which, when fully established, may resist all treatment or prove rapidly fatal.

Alcoholic paralysis, on attaining to the stage of double wrist and ankle drop, loss of the patellar-tendon reactions, and high-stepping gait, is now readily recognized by every moderately well-informed practitioner, and accurate descriptions of it have found their way into ordinary text-books of medicine.

In the *Lancet* for June 8, 1889, Dr. James Ross calls attention to three symptoms, which he states are hardly ever, if ever, absent as forerunners of this form of paralysis, although they are by no means peculiar to poisoning by this agent, being met with in other forms of peripheral neuritis. These symptoms are: 1, disorders of the tactile sensibility of the extremities, which patients usually describe as numbness of the fingers and toes; 2, vaso-motor spasm of the extremities, named by Raynaud "local asphyxia," and which the patients refer to as "deadness" and "coldness" of the fingers and toes; 3, severe cramps, which are most frequent and severe in the muscles of the calf, although these muscles are by no means the exclusive seat of them.

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### *EUGENIA CHEKEN.*

Dr. Dessauer (*Journal de Médecine de Paris*, May 5, 1889) has employed the leaves of this plant as a tonic, expectorant, and diuretic. He prescribes this drug in infusion of ten per cent., or in a fluid extract, eighty per cent., four to five times daily, or for children he advises the use of a syrup made of 1 part of the leaves to 2 parts of syrup. He claims that it possesses antiseptic properties, and is indicated in purulent bronchitis, cystitis, and other infections of mucous membranes. He likewise refers to Rusby's recommendation as to the use of this drug in rheumatism.

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### *THE BILIARY SECRETION IN MAN.*

In the *Lancet* for June 1 and May 23, Mr. S. M. Copeman publishes an account of a biliary fistula occurring in a man, with some observations on the bile obtained from it. He finds,—1. The normal amount of bile secreted by the liver is about forty-eight ounces, or two and a half pints, per diem in a man of twelve-stone. 2. The rate of flow varies in accordance with the time of ingestion of food, there being usually a rise between one and two hours after a meal. The secretion, moreover, is not a continuous one, the bile being extruded into the gall-bladder by repeated peristaltic contractions of the bile-ducts. 3. The color of the bile in man is probably always of an

olive-green, biliverdin, and not bilirubin, being the pigment which is present in the greater quantity. 4. The amount of solids present is normally about ten per cent., this percentage being kept up by a continuous reabsorption of the bile salts from the intestine following on their secretion; the specific gravity of the bile falling when it is drained away as fast as formed, as occurs in a fistula. The amount may also be increased after the bile is first formed by absorption through the walls of the gall-bladder. 5. Bile is necessary to the assimilation of fats; but not absolutely so, although doubtless of use, for that of proteids. Its purgative action is more than doubtful. 6. The bile has no true antiseptic action, although it is able to a small extent to control putrefactive changes. 7. Stercobilin probably is formed by reduction of the bile pigments in the intestine; but urobilin appears to be formed in the liver, together with the bile pigments, by a slight change of metabolism.

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### *SULPHONAL.*

VERHOOGEN (*London Medical Recorder*, May 20, 1889) insists on the excellent results obtained with sulphonal in the treatment of certain cases of insomnia in which opiates were formally contraindicated. In doses of 15 grains, administered *per rectum*, sleep invariably supervened within twenty minutes, and lasted six hours or thereabouts. The patients complained of no disagreeable after-effects, and improved in condition. Occasionally it was found necessary to repeat the dose during the night. He mentions the case of a patient who was given the drug in this way for six weeks consecutively. The injection was usually given at 9.30 P.M. On several occasions she fell asleep before the time arrived for the injection, and this was consequently dispensed with, but it was always easy to see from her fatigued and comfortless face in the morning that the same amount of repose had not been experienced as with the drug. He asserts that no contraindication exists to the use of sulphonal. Cardiac and arthritic cases, renal and dyspeptic cases, are all amenable to its influence under all circumstances, and neither intolerance nor tolerance are to be apprehended. The usual dose is a gramme (15½ grains), and this always proved sufficient to induce sleep. It is not easily taken by the mouth on account of its relative insolubility, and it is best given suspended in tepid water *per rectum*, though it is rarely possible to secure that all the drug shall find its way into the gut. Some difference has been noted in the effects obtained from the drug, which, it is suggested, may be due to variations in the quality.

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### *PROFESSOR KREMIANSKI'S TREATMENT OF PHTHISIS.*

PROFESSOR KREMIANSKI, whose name is known in connection with the treatment of phthisis by means of the inhalation of aniline and the internal use of aniline and acetanilide, has recently published a pamphlet giving some account of the latest practice as employed in his out-patient clinic, where he has accumulated a large experience, having already treated fully a thousand cases. Latterly he has found great advantage from combining iron with his usual antiseptic treatment, seeing that it minimizes the tendency to the blue coloration so often noticed in patients who are taking aniline or antifebrin; besides, it has of course an admirable effect on the anæmic condition which is common to most phthisical patients. He also sometimes employs an ointment for rubbing in under the clavicles, consisting of aniline, boracic acid, and oil of peppermint, an ounce of each of these ingredients being combined with eight ounces of white vaseline. Professor Kremianski has sometimes been accused of sailing too close to the methods of quacks, but no one can read his published cases without being convinced that, while there is one main idea,—viz., that of attempting the destruction of the tubercle bacilli by means of substances poisonous to them, especially aniline,—Professor Kremianski's methods are eminently scientific and very far removed from the empiricism of the quack. Every case is examined and diagnosed with great care, measurements of all kinds, microscopical examinations and physical signs being recorded at frequent intervals, and each case being treated on its merits and according to the special needs and idiosyncrasies of the patient. Some interesting cases are given in the pamphlet referred to, several of which are recorded by Professor Kremianski's principal coadjutor, Dr. Goliarkhovski; and some charts showing the improvement in the temperature and general physical conditions during the progress of the treatment. In some of the cases the bacilli seemed to have disappeared, while in others their numbers had decreased to an

enormous extent. It must not be forgotten that a very important part of the treatment consists in giving the patient considerable quantities of a specially prepared meat-powder, prepared by Professor Kremianski, a notice of which appeared in the *Lancet* of October 27, 1888.—*Lancet*, June 1, 1889.

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### *THE INFLUENCE OF ANTIPYRIN ON THE SOLUBILITY OF QUININE SALTS.*

In the *American Journal of Pharmacy* for June, 1889, attention is called to the increase of solubility of quinine salts in the presence of antipyrin. TRIULZI noticed that if fifteen and a half grains of hydrochlorate of quinine were heated with six or seven and a half grains of antipyrin and thirty-two minims of water, solution takes place at 77° to 86° F.; with three to four grains of antipyrin, at 105° to 122°. Fifteen and a half grains of hydrochlorate of quinine with thirty-two minims of water, dissolves at 125.5° to 182.8°. On cooling, only the last solution deposits the quinine salt. Similar results were obtained with valerianate of quinine. This observation may be of value in preparing neutral quinine solutions for subcutaneous injections.

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### *A NEW MODE OF ADMINISTERING COD-LIVER OIL.*

M. LEFAKI calls attention to a method of administering cod-liver oil which seems to possess considerable advantage (*Journal de Mèdecine et de Chirurgie*, May, 1889). If equal parts of cod-liver oil and lime-water are mixed together, a milky liquid is obtained which is inodorous, has the consistency of syrup, and may be flavored at will either with lemon syrup or vanilla, or other extract. The cod-liver oil thus saponified is almost agreeable to the taste, does not adhere to the mouth, and does not leave any nauseous after-taste. In addition to these advantages saponified cod-liver oil is preferable to the various emulsions which are on the market. In the first place, it is permanent, the fluid remaining homogeneous. It is readily assimilated even by weak stomachs; it may be administered even during diarrhœa; besides, it is combined with calcareous elements, which are likewise indicated in the affections which call for the use of the cod-liver oil. Of course, the saponified oil may be associated with the phosphates or the hypophosphites of lime. Finally, it may be readily and rapidly prepared, and is of low price.

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### *THE TOXIC ACTION OF CHROMIC ACID AS A CAUTERANT.*

At the meeting of the American Association of Genito-Urinary Surgeons, held at Newport, May 21 and 22, 1889, DR. J. WILLIAM WHITE, of Philadelphia, sent a paper with this title to be read (*New York Medical Journal*, June 8, 1889). The author stated that for years he had been in the habit of using the above-named agent in obstinate cases of recurrent vegetations upon the genitals. Although such papillary growths sometimes accompanied specific discharges from the genitals and ulcers of venereal origin, yet they were not dependent upon the specific poisons of these diseases, and were often found upon persons in no way affected with any venereal taint. A young woman, an inmate of the venereal wards of the Philadelphia Hospital, last October, had a mass of vegetations of this nature covering the labia majora and nymphæ, extending up towards the pubes and down towards the anus. This mass was several inches thick. After two weeks of treatment by cold poultices and water dressings, the application of chromic acid was ordered. The solution used contained 100 grains to the ounce of water. About half an ounce of the liquid was used, the vagina and anus being protected by tampons of cotton soaked in carbolized oil. After this single application the patient passed a restless night, and called frequently for water. At 4 P.M. she rose to urinate and fell; she was carried to bed and slept three hours. Thirst continued all the morning without fever, and nausea supervened. At 3 A.M. she was pale, with cold extremities, pain in the left hypochondriac region, and fear of approaching death. The axillary temperature was 99° F. Active treatment failed to benefit her, and she died at 6.30 P.M., twenty-seven hours after the application of the acid. Intellection was preserved to the last. Little was found macroscopically at the autopsy. The stomach was distended, and its mucous membrane showed numerous fine ecchymoses, the result of vomiting. The biliary ducts were patulous. The liver was small and weighed forty ounces; a section showed the nutmeg change. The gall-bladder was distended with a very dark-colored secretion. The spleen was flabby and pale and weighed five ounces. The kidneys

were the seat of passive congestion, and their capsules were easily stripped off. Section of the vagina showed the mucous membrane dark red in color, covered with yellowish discharge, with no evidences of contact of the acid. The membranes and choroid plexus of the brain were injected. Dr. John Marshall had analyzed the viscera, with the following results: The kidneys and liver contained chromium, probably sodium chromate, which was poisonous in doses of from 1 to 3 grains. The rectus muscle was free from chromium. The chromic acid had probably combined with the sodium carbonate of the blood to form sodium chromate. The sudden death in this case, the author continued, was surprising, as the text-books contained no word of warning against the dangers of using chromic acid, while recommending its employment. Gubler, however, in the *Gazette Méd. de Paris*, 1871, had said that the absorption of chromic acid was not free from danger, and patients had been poisoned by a too extensive application to the surface of their bodies.

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*THE DIAGNOSIS OF PLACENTA PRÆVIA BY PALPATION OF THE ABDOMEN.*

At the meeting of the Obstetrical Society of London, held June 5, 1889 (*Lancet*, June 15, 1889), a paper with the above title was read by Dr. Herbert Spencer, assistant obstetric physician to University College Hospital. Having described shortly two cases in illustration of the possibility of determining the site of the placenta by abdominal palpation when it is situated in the upper segment of the uterus, the author gave in detail seven cases of placenta prævia (all the cases he had investigated from this point of view) in which he had been able by palpation of the abdomen to diagnose the presence of the placenta in, or its absence from, the front wall of the lower segment before a vaginal examination was undertaken, the diagnosis being subsequently verified by vaginal and intra-uterine examination. The seven observations were all made in multiparæ with head presentations, before the membranes were ruptured, without the employment of an anæsthetic, and in the absence of pains. In three of the seven cases the exact site of the placenta on the front wall of the lower segment was determined by abdominal palpation, and in two of these the placenta was felt at a time when it was impossible to feel it by the vagina. In the remaining four cases the placenta was diagnosed by abdominal palpation to be absent from the front wall. In making the examination, it was recommended that the patient lie on her back, the bladder having previously been emptied; the examination should be gentle, made in the absence of pains, and prolonged over several minutes, or repeated if necessary. The following rules for making the diagnosis were formulated: In an ordinary vertex presentation (placenta in the upper segment), the occiput, forehead (at a higher level), and side of the head can, under favorable circumstances, be distinctly felt in the lower segment of the uterus by means of abdominal palpation. In a case of placenta prævia in which the head presents, the head is not felt where the placenta is situated: it is distinctly felt where the placenta is absent. In cases where the placenta is in front, the organ is felt as an elastic mass of the consistence of a wetted bath sponge, which keeps the examining fingers off the head. Its edge may be felt, and has the shape of the segment of a circle; within the circle all is obscure to the touch; outside the circle the head or other part of the child is plainly felt. Impulses to the head are not clearly felt through the placenta; impulses to the head through the placenta are distinctly felt at the spot from which the placenta is absent. The same applies to combined vaginal and abdominal examination. The author believed the method of diagnosis he had described to be of some practical importance, and solicited a more extended trial of its value.

Dr. Braxton Hicks considered that the author had done something to remove the slur, cast by the French and others, that abdominal palpation is not taught in England. Incidentally, in writing, Dr. Hicks had stated that in many cases the seat of the placenta could be identified by the hand, the placenta being on the one side and the fœtus on the other side of the relaxed uterus. In one case of placenta prævia he had diagnosed the position some weeks before it was confirmed during delivery.

Dr. Barnes thought that the paper was a valuable contribution to the art of scientific diagnosis. It was observed by others, and he had himself confirmed the observation, that when the placenta was seated in the upper zones and in front of the uterus, the uterine wall was thickened and raised at the area of placental attachment, forming a hillock, which rose above the level of the smooth surface of the uterus. This was also confirmed by auscultation.

Dr. Matthews Duncan had long and often sought to diagnose the portion of the healthy placenta during pregnancy by palpation, and had always failed. Meantime, he did not believe that it could be done; but what he had heard to-night would make him return to the subject, and he was ready to learn. In order to know what was to be expected and felt, it was necessary to divest the mind of the perception of the feeling of a born placenta, and to learn the feeling of an attached, living, healthy placenta in the uterus. The born placenta was a thrombosed cake. Tracing the cord into the uterus, as in a version, the obstetrician came to the placenta, and felt it ill-defined, soft, with a fretted, vesicular surface,—not easy, in fact, to recognize at first touch. Placenta prævia was not the best condition for the study of this supposed palpation. Far more favorable for the purpose were the conditions of advanced healthy pregnancy in a multipara with a relaxed uterus and a thin abdominal wall. If placental palpation were ever made out, it would be there. Dr. Duncan had never made it out.

Dr. Champneys asked Dr. Hicks and Dr. Barnes whether, in the cases in which they had stated that they had felt the placenta from without, they had verified their diagnosis by internal palpation, or whether they felt something which they believed to be placenta. The value of Dr. Spencer's paper lay in this verification, though the cases were few. Dr. Champneys was surprised to hear Dr. Barnes speak of diagnosis of the placental site by auscultation. In two or three cases of advanced extra-uterine pregnancy in which the placenta could be plainly felt, and in which the diagnosis was established by subsequent abdominal section, no sound was ever heard over it, though repeatedly sought for. For these and all other reasons he believed that auscultation was no guide whatever to the situation of the placenta.

Dr. John Phillips stated that in a case of Cæsarean section which had occurred in his practice, every attempt was made, on exposure of the uterus, to discover the situation of the placenta by auscultation and palpation. The evidence being negative, it was concluded that the placenta was situated at some distance from the line of incision. Yet on making the incision the placenta was found immediately beneath. This experience militated against the possibility of diagnosing the position of the placenta through the abdominal walls.

After some observations by Dr. Hayes, it was noted by Dr. Herman that in all the reported cases the fœtal head occupied the lower uterine segment. Thickening of the lower part of the uterus was easier to appreciate when the head filled that part than when it was occupied by softer and more movable parts of the fœtus. In the reported cases the placenta was described as "an elastic mass," the edge of which could be felt. Such placentæ were the exception, and, as Müller had demonstrated, were generally thinner than usual and expanded. Thus Dr. Barnes had described a placenta that enveloped the fœtus like a sac; and Dr. Hicks had noted a case where that structure occupied almost the whole inner surface of the uterus. Dr. Herman was surprised to hear Dr. Barnes speak of ascertaining the position of the placenta by auscultation. He thought that it was now conclusively proved that the uterine souffle had nothing whatever to do with the placenta. In extra-uterine pregnancy it was so rarely heard that its absence had been considered as an indication that pregnancy was extra-uterine.

Dr. William Duncan dwelt on the difficulty of diagnosing the position of the placenta by external palpation. A few months ago he performed Porro's operation. When the anterior surface of the uterus was exposed, it was not found to bulge forward, nor was it deepened in color, as should be the case, according to Dr. Spencer, when the placenta was in front; yet, on plunging the knife into the uterus, the placenta was cut through.

Dr. Boxall had made it an invariable rule to examine the abdomen with all the precautions advocated by Dr. Spencer. Yet he had rarely found palpation of any avail in determining the placental site. He had, however, investigated the position of the placental implantation by other methods, commenced five years ago. They led him to the conclusion that, while the sides, front, and back were about equally favored, the placenta tended very distinctly to avoid the two poles of the uterus. At the same time, considering that, generally speaking, a point somewhat nearer the upper than the lower pole was the selected site, and that the placenta was very rarely attached quite low down in the uterus, Dr. Boxall was not a little surprised to find the relative frequency with which the lower or dangerous zone was encroached upon, without of necessity entailing hemorrhage. He could, however, call to mind no case in

which, when proved by other means to be implanted low down on the anterior wall, it had been possible to map out the position of the placenta by palpation of the abdomen.

After some remarks by the President, DR. BRAXTON HICKS said, in answer to Dr. Champneys, that for many years he had seen from time to time such proofs as led him to feel certain that the position of the placenta could be made out not infrequently. In regard to Dr. Matthews Duncan's observations he would add that, though in many cases it might be difficult to recognize this, he thought that if this paper by Dr. Spencer led to more extended observations, the author's conclusions would be established. Dr. Hicks himself first pointed out, not so very long ago, that the uterus during the whole of pregnancy was intermittently contracting and relaxing, and now that fact was fully recognized.

DR. BARNES was ready to accept Dr. Matthews Duncan's and Dr. Champneys's avowal that the placenta could not be made out by palpation as applied to themselves; but those obstetricians were not entitled to deny that others could do it.

After some remarks by DR. W. S. A. GRIFFITH, DR. SPENCER replied. He had stated in his paper that the placenta was not firm to the feel, and had likened its consistence to that of a wetted bath sponge for want of a better simile; it was a soft, elastic swelling. He was rather surprised to hear that Dr. Braxton Hicks and Dr. Barnes had long been able to feel the placenta by abdominal palpation, and had not recorded their cases. From observation of the placental souffle in normal cases and in placenta prævia he could not admit that information of diagnostic value could be obtained by auscultation. The living placenta did not differ from the dead in consistence only; it was also much larger. Dr. Spencer could confirm Dr. Champneys's statement as to the ease with which the placenta could be felt in some cases of extra-uterine gestation. The Cæsarean section and the Porro's operation cited by Dr. Phillips and Dr. William Duncan were not examined under the conditions laid down in Dr. Spencer's paper as essential; besides, they were not cases of placenta prævia. From actual measurement of specimens he did not think that the prævial placenta was unusually thin and spread out. The presenting part varied, chiefly as the result of examination or apoplexy. In one of his cases, at the eighth month the part felt by the abdomen was an inch and a half thick near the edge.

*THE TREATMENT OF NASAL CATARRH.*

DR. BEVERLEY ROBINSON read a paper with the above title before the meeting of the New York Clinical Society, held April 26, 1889, and his paper was published in full in the *New York Medical Journal* for June 15, 1889. Dr. Robinson's experience in the treatment of this affection has been so extensive that we abstract in full the more important of the practical points brought out in his address. In the first place, as regards douches: he maintains that while the use of the douche may cleanse the inferior turbinated bodies and a portion of the median, as usually employed it never reaches the upper part of the nasal passages; besides, it frequently gives rise to median otitis. Further, if a man has an occluded nose and uses douches, he will find that they will occlude it more. If he has a pretty free nasal cavity, they will at first tend to cleanse it, but after a week or a month it will be found that the obstruction is only temporarily relieved. As regards sprays: Dr. Robinson formerly held that the spray was curative of many nasal troubles, but now he hardly believes that it will cure any case, though sometimes it is an aid. The principal value is as a cleansing measure. Powders also for a while were believed to cure catarrh, and while they are better than douches, and even than sprays, Dr. Robinson has now likewise lost faith in them. For a year or two past he has relied more on ointments to produce curative results, the objection to them being the difficulty in their application. At present he uses a spray of carbolized oil, which has in the first place the advantages of the spray; it further possesses the advantage of an oleaginous agent, and in addition is a medicament, since it carries carbolic acid. Another method of employing medicinal agents locally is in the form of vapors. The volatile medicament may be placed in water, and when this is raised to a sufficient temperature a vapor is formed which may be inhaled. It will come in contact with all parts of the mocous membrane, and might be supposed to be an excellent method, but is nevertheless in practice a failure.

It thus seems that all these local measures are unable in many cases to relieve, much less to cure, and in such a position Dr. Robinson recommends the internal use of either cubebs, sulphur, or ammoniacum. Sulphur may be used in spray or may be taken internally in the form of sulphur waters. Cubebs may be given with the probability of being useful in cases where catarrhal dyscrasia is

apparently present, and provided the digestive organs are undisturbed. Ammoniacum is also only useful in certain cases, for in some it causes the secretions to become too thick and tenacious and hard to remove from the nose or naso-pharynx. When it is found that ointments, vapors, etc., and some judicious general medication, with proper attention to coincident or complicating affections, habits, surroundings, and all measures of good hygiene do not produce curative results, sometimes acids may avail, pain being prevented by the previous use of cocaine or rhigolene. Of the acids Dr. Robinson regards monochloracetic acid as the best for cauterizing the nasal mucous membrane. A piece of cotton may be wrapped on a steel carrier dipped into the acid and carried up and through the nasal passage, following particularly the lower meatus, or the inner margin of the middle turbinated body. The monochloracetic acid produces a slough, but the slough does not come away until the mucous membrane beneath it is so far healed that there is no danger of adhesions. Chromic acid may likewise produce good effects as a cautery, but care must be taken not to use too much of the acid at once, as too much may cause poisonous effects from absorption. This acid is more severe than the monochloracetic acid.

When the septum is the cause of the occlusion, a suitable operation must be performed for the removal of the offending portion. For such purposes the galvano-cautery is without doubt the best, provided a good instrument is employed. And if the parts have been anæsthetized with cocaine, its use is attended with neither pain nor troublesome bleeding. Dr. Robinson states that in his hands with the use of the galvano-cautery he has yet to notice anything worse than temporary adhesions produced in very narrow nasal passages. Usually when Dr. Robinson finds a septum with a prominent deviation anteriorly, he uses a Jarvis's or Weir's cutting forceps, and, after cocaine has been applied, cuts away as much tissue as is required to relieve obstructed breathing from this source. When the galvano-cautery, cutting forceps, or the saw fail to relieve the internal nasal obstruction recourse may be had to the trephine. Having a battery of sufficient power, he uses a nasal trephine, and, in cases demanding it, bores one or more holes through the projecting spurs of the septum, the ridges being pared down with suitable scissors, nippers, or even at times with a snare. This operation by means of the trephine may occasion quite smart hemorrhage; but the trephine is an excellent instrument, and, in the hands of a skilful manipulator, not likely to do harm. When a nasal polypus is present, the forceps, the wire snare, or the galvano-cautery may be used, first employing cocaine to prevent pain. The galvano-cautery or cold wire may also be employed in treating posterior hypertrophies of the turbinated bodies, but it may prove easier to try chromic acid. Strong solutions of nitrate of silver only aggravate nasal catarrh.

In the discussion which followed the reading of this paper, Dr. Delavan stated that he thought the treatment of nasal catarrh a very important matter. He took issue with the statement that practically every one had it, and that it was not important, after all, to attempt to treat it specifically. While he would admit that some cases were not to be relieved by sprays, he thought that another class of patients having nasal catarrh were greatly relieved by them. It seemed improbable to him that all the statements made by different competent observers in regard to cures resulting from such local applications should have no basis in fact, although it might be admitted that they were fewer in number than were commonly supposed. Mild cases were commonly relieved without doubt.

He agreed with Dr. Robinson in his ideas about the means of making local applications and of doing other work in the nasal cavities. With regard to the use of oily substances, and particularly of vaseline, vaseline was very useful, but it was to be remembered that few drugs would dissolve in it. It was a bad excipient, and, moreover, it was not well absorbed. Its value was as an inert and protective substance, which would preserve the moisture of the mucous membrane and prevent it from being irritated by particles of dust, etc. But its value was limited to that of a protective. He had used with great satisfaction the petroleum preparation known as liquid albolene.

With regard to acids he would say that, while he had a certain amount of respect for the value of chromic acid, he considered it inferior to the galvano-cautery. He had in some instances used each at different times on the same patient, where the patient was himself a physician or a person of intelligence, and the galvano-cautery had always been preferred. Chromic acid was followed by more reaction, gave more pain at the time, and had no advantages of any sort to compensate for these disadvantages. The argument that the action of chromic acid was

chemically self-limited was absurd when we considered that limitation of the action of the galvano-cautery was under the absolute control of the operator. There was no doubt that of late operations had been very much overdone and improperly performed for pathological nasal conditions. Patients were constantly applying at clinics in this city for the repair of injuries and damages sustained as a result of operations attempted for the improvement of their nasal passages, and many of them had come under his own notice. He had recently seen a patient both of whose inferior turbinated bodies had become adherent to the wall of the nasal chamber through their whole extent,—a condition due to the mistaken or careless use of the galvano cautery by some unwise operator.

With regard to the complaints so often heard about the slow healing and tardy recovery following nasal operations, it was to be borne in mind that there was no local peculiarity of tissue or other necessary cause for such delay in the healing process, and that a neglect of surgical principles in the treatment of the wound, and especially in keeping it aseptic, was usually to blame. It was indispensable that, after a nasal operation, the patient should be kept under the same conditions recognized as essential to success after the other serious operations in surgery.

In undertaking operations on the nasal septum, the speaker thought it necessary that a physician should be a competent surgeon, and that no one instrument or appliance could be looked to for the cure of a given deformity in different patients. So, in patients coming for the relief of septal malformation, the deformity varied widely in position and extent, and no one instrument was made which was adapted to every exigency that might arise in operations of this sort. The saw did best as an all-around instrument, but, where the deformity was situated high up and far back, a resection would be the only means of getting a satisfactory result; neither trephine nor gouge would do the work needed. The trephine he regarded as a beautiful little instrument, and had great respect for its value, but was compelled to recognize its disadvantages. It left behind a circular cut which lacked smoothness. Then, when starting to make an incision, it was always easy to penetrate the soft or cartilaginous tissues first met with, but behind these might be encountered bone as hard as ivory, which would give the operator much trouble. Ether was needed in a large number of these nasal operations. Neither saw nor trephine filled every indication, and he trusted we were on the eve of having some new instrument which should be even in action, efficient, rapid, and smooth, and also adapted to the hand of the non-expert operator. He had heard the disadvantages of the saw called attention to before. It was significant that, while this instrument had been so much used in France for years past, in Germany chisels and gouges were depended on almost exclusively.

As to the value of local treatment of catarrhal conditions, he did not take so hopeless a view of it as Dr. Robinson did. Operations within the nose were being overdone, as he had already said, and this, together with carelessness in after-treatment, was making them undeservedly feared. It must never be lost sight of that these were operations done very near the sensorium, done in bone too (and that supplied by the sensitive fifth nerve), and sometimes followed by severe shock. After such an operation the patient needed to be put to bed, given iron and tonics, and kept for a considerable time under the eye of the operator, instead of being left to carry out instructions himself with no one to enforce them.

Dr. W. H. Flint made some remarks in regard to the nasal douche. It was said in some quarters that it was never to be used; in others that it was always worthy of trial. He thought himself that a middle course was the true one in this matter, as it was in so many other things. He had had to do with many people troubled with nasal catarrh, and among them himself. These patients frequently asked their physician what they were to do in order to free themselves of the accumulations that formed in their nasal passages. He thought it safe and wise to tell them to use a douche occasionally for this purpose, employing a stream of salt water from a suspended bag or a syringe. The only danger was that in case the nostrils were occluded and a stream was forced in on one side some of the water might enter the Eustachian tube and give rise to irritation or inflammation in the middle ear. He had used the douche once each week for the past thirteen years to remove the accumulations from within and the dust of the streets, and had never experienced anything but relief. He knew many people who had used the douche for a long time without accident or drawback.

Dr. Robinson replied to Dr. Spaulding's question that he had frequently known pain-

ful sensations in the ears to follow the snuffing up of liquids, in some persons, but rarely suppurative otitis media. That which was most important among symptoms in those who had obstinate nasal catarrh was some trouble in the eyes or ears, loss of smell, and other possible extensions or reflex troubles; not the hawking and spitting. It was necessary that we should realize how large a class of people there was who were running every few days to the office of some specialist during periods covering weeks or months to have their nasal passages sprayed out, and who, if they were asked whether the treatment was doing them any good, would necessarily answer in the negative. These were commonly people who habitually overate, exposed themselves to draughts or wet, clothed themselves carelessly, and paid little attention to the regular action of their bowels. Quite commonly only twenty-four hours of a constipated habit was needed to bring on a nasal catarrh which would run for days. It was very significant how a blister applied over the liver to bring up the activity of the portal circulation relieved a catarrh in some persons, just as it was familiarly known to do in certain cases of epistaxis. We must regard the body differently from a mosaic table, out of which one could pick up a single piece and do with it this way or that. He must still hold to the general truth of the statement that he had made, to the effect that, as a whole, people suffered more harm from specialists than they received benefit. Taking them as a multitude, they would be better off without the treatment so given them, directed to different or perhaps many successive regions of their bodies. This principle was the more in need of recognition when it was considered that the great majority of patients who were to receive advice must take it from the general practitioner, and that ordinary catarrh was the malady from which they wished to be relieved. Nasal operations were needed, of course, in certain cases, but, like amputation and other capital operations, in proportion to the whole number of people to be treated they were rare.

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### *AMMONIA AS AN ANTISEPTIC.*

Some years ago Dr. B. W. Richardson, in a communication to the Medical Society, called attention to the antiputrescent properties of ammonia, and showed that blood, milk, and other alterable liquids could be preserved for a long time by adding to them certain quantities of solution of ammonia, and solid substances, such as fish, by keeping them in closed vessels filled with ammonia gas. Some doubts that would appear to have been raised as to the results reported, on the ground that ammonia was itself a product of decomposition, induced Dr. Gottbrecht, of the University of Greifswald, to repeat the experiments, with the result of practically confirming all Dr. Richardson's statements (*Arch. exp. Path. u. Pharm*, April, p. 385). After some preliminary experiments, in which animal matter placed in five-per-cent. ammonia solution was found free from putrescence after nearly two years, ammonium carbonate was used in the place of the free alkali for the sake of convenience. The first experiment made with the washed intestines of freshly-killed pigs showed the power of ammonium carbonate to retard putrefaction to be directly dependent upon the concentration of the solution, a one-per-cent. solution retarding it until the third day, and a ten-per-cent. solution until about the sixtieth day. When added to gelatin in which putrefaction had already been set up by inoculation, it was found that a five-per-cent. solution so modified the conditions that the putrescence ceased, and a two-and-a-half-per-cent. solution inhibited the development of bacteria, so that the liquefaction of the gelatin was practically stopped. Other experiments showed that in an atmosphere impregnated with ammonium carbonate meat could be kept for six months, and at the end of that time remain nearly unaltered. Dr. Gottbrecht also discusses the conditions under which products of putrefaction may act prejudicially to the originators of the putrefaction. He points out that cadaverine, a product of decomposition of a cadaver, in certain degrees of concentration acts as a direct poison upon the abscess coccus, and he concludes that, similarly, all products of tissue-change in living organisms can become noxious to their originators as soon as their quantity exceeds a certain limit.—*The Pharmaceutical Journal and Transactions*, June 8, 1889.

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### *THE TREATMENT OF CHRONIC NERVOUS URTICARIA WITH ANTIPYRIN.*

The common causation of urticaria is to be found in some gastro-intestinal disturbance which is properly treated by suitable diet and alkalies. Professor Hardy, however, would recognize a form of urticaria of nervous origin, in which nervous remedies are indicated,

and in which DR. NITOT (*Journal de Médecine de Paris* for June 2, 1889) would attribute almost specific curative powers to antipyrin. Dr. Nitot reports in full four cases all occurring in young women who had since early childhood been subject to attacks of urticaria, in which alkaline treatment had utterly failed to produce any relief. In one of these the eruption appeared periodically each day, and Dr. Nitot recommended the use of antipyrin in seven-and-a-half-grain doses two or three hours before the expected period of eruption. After four days of this treatment the urticaria disappeared completely, and did not return. His other cases are somewhat similar to the above, with the exception that the periodic element was not so well marked. In very chronic cases the improvement was less marked than in recent cases, though even then the cure was progressive and continuous.

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*CREOLINE INJECTIONS IN DYSENTERY.*

DR. N. P. OSSOVSKI, of Tobolsk, in Siberia, communicates to the *Vrach* an account of a series of trials he has made of creoline injections in dysentery. The plan adopted was to place the patient on all fours, so as to relax as far as possible the abdominal pressure, and then, by means of a long, soft gutta-percha tube passed up the rectum, to inject slowly a one-half per cent. solution, or rather emulsion, of creoline, allowing this to remain as long as possible, which was, in most cases, from five minutes to half an hour, but occasionally several hours. The injection was repeated twice, and sometimes three times, a day, and in the great majority of instances very soon produced a marked improvement in the patient's condition, the tenesmus, blood, and number of stools becoming less or disappearing altogether. In some cases the dysentery was arrested, but a catarrhal condition was left. Here other treatment had to be resorted to, as injections of acetate of lead and tannic acid, together with cinchona and sulphate of soda. Creoline injections were in no case found to produce any undesirable symptoms, though they were employed in children of under a year old, one of whom was suffering from cholerina, and though they were used by Dr. Kolokoloff, a colleague of Dr. Ossovski's, of a strength double as great as that mentioned above.—*Lancet*, May 18, 1889.



## Reviews.

ATLAS OF VENEREAL AND SKIN-DISEASES. By Prince A. Morrow, A.M., M.D. Fasciculi VII., VIII., IX., X., XI., XII., XIII.
New York: William Wood & Co., 1888.

These several fasciculi of this atlas now before us bear out upon the whole the favorable impression made by the earlier numbers. As with the preceding parts, these each contain five colored plates, and with many of them several figures are presented upon a single plate. Fasciculus VII., apparently the last of the parts devoted to the illustration of venereal diseases, contains several admirable representations, Plate XXXII., showing syphilis of the mucous membranes of the buccal cavity, and Plate XXXIV., of syphilitic pemphigus and polymorphous syphilide, being especially noteworthy In this number is added an excellent wood-cut, depicting chiefly the several conditions in hereditary syphilis, such as nodes, gummata, malformations of the teeth, etc.

The remaining fasciculi—VIII., IX., X., XI., XII., and XIII.—are devoted to illustrations of diseases of the skin. Plates XXXVI., XXXVII., and XL., in Part VIII., presenting comedo, milium, sudamina, the eruptions of typhus and typhoid fevers, scarlatina, and erysipelas, could scarcely be better. Plates XXXVIII. and XXXIX., of variola, varicella, rubeola, and rubella, while fair, are not as meritorious as the others of this number. In Fasciculus IX. the Plates XLII., of herpes iris, and XLIV. and XLV., of the various types of eczema, are of superior worth. Fasciculus X. contains admirable illustrations of eczema rubrum, dermatitis exfoliativa, and the bullous eruption produced by the ingestion of potassium iodide. The same favorable opinion, however, cannot be expressed of the illustrations of impetigo contagiosa and the "ulcerated hydroa from potassium bromide." The former is a poor selection, while the bromide eruption is not clearly depicted. The plates of the next part (XI.), showing the herpetic eruptions,—dermatitis, herpetiformis, pemphigus, purpura simplex, and purpura thrombotica,—are, with the exception of the last named (purpura thrombotica) satisfactory productions. One plate, however, is scarcely sufficient to convey a clear idea of the eruption of dermatitis herpetiformis, for, while the eruption may be as here pictured,

cases are, as a rule, rarely seen in which there is so much uniformity in the eruption as shown in this plate. Fasciculus XII. contains well-executed illustrations of lichen planus, lichen ruber, acne vulgaris, acne rosacea, and molluscum epitheliale; the two figures of psoriasis, from the author's own collection, are not on a par with the other plates in this number, either in selection or execution. In the thirteenth fasciculus are found representations of elephantiasis of the leg and scrotum (Plate LXI.), leucoderma, alopecia areata (Plate LXII.), keloid, fibroma (Plate LXIII.), xanthelasma, rhinoscleroma (Plate LXIV.), and xeroderma pigmentosum (Plate LXV.). In this number Plates LXI. and LXIII. are especially commendable; Plate LXV. is fair; the others are scarcely up to the standard.

In conclusion, it may be said, as already intimated, that these seven fasciculi, viewed as a whole, are of more than average merit, and the various representations are probably, in the main, as life-like as may be expected to be found outside of the clinic and consulting-rooms.

THE CEREBRAL PALSIES OF CHILDREN. A CLINICAL STUDY FROM THE INFIRMARY FOR NERVOUS DISEASES. By William Osler, M.D.

Philadelphia: P. Blakiston, Son & Co., 1012 Walnut Street, 1889.

This brochure of one hundred odd pages is based upon a thorough examination of the literature of the cerebral palsies of children, and the study of one hundred and fifty-one cases made in various Philadelphia eleemosynary institutions. Probably two-thirds of the book is taken up with descriptive notes of the various cases, and will hardly be read except by the specialist, who wishes for himself to dig out of original records the history of the important affections spoken of. The descriptions, conclusions, remarks, and miscellaneous gatherings made by Professor Osler from all his wide reading and wide clinical observation are extremely valuable, and the little book belongs to that class of treatises not very widely, or, at least, not very thoroughly, read in the present, but remaining for a century the starting-point for the study of the disease,—a mooring-post for the fastening of professional opinion,—a scientific classic that shall long hold in memory the name of its gifted author.

## Correspondence.

### PARIS.

(From our Special Correspondent.)

Dr. Brown-Séquard's Essence of Youth — A New Heart-Poison—Plenty of Mad Dogs in Constantinople —Poisonous Rain-Water—Tanacetic Rabies—Congresses of Hygiene and Dermography, Zoology, and Therapeutics—Exposition Items.

Dr. Brown-Séquard has created quite a sensation in medical and other circles. On the first of this month, at a meeting of the Paris Biological Society, whose president he is, he made a communication on the influence of glands on the nervous system. The subject of itself is not a sensational one, but the paper soon ran off into a most unexpected channel. He spoke substantially as follows: "Glands have in the economy another function, perhaps, besides separating from the blood used-up products to be excreted. They may at the same time secrete substances having considerable influence over the nervous system and circulation. *Prima facie* the theory is apparently confirmed by the not uncertain influence on the different functions of the nervous system exercised by the ablation of testicles, in eunuchs, for instance. To prove the hypothesis, I tried several times to graft on one animal another animal's parts containing the testicles. Once only I succeeded, with an old dog, who thereby recovered great genital vigor. Within the few months past I took up again the same investigations, only changing the procedure. Into the connective tissues of animals I injected either blood from the testicular vein, or a liquid obtained by triturations of the testicles, or even the seminal vesicles. From the fact that no accidents resulted, I concluded the injections were at least harmless. Next I practised upon myself injections with a liquid prepared from triturations of guinea-pig's testicles and the blood from the testicular vein. No other local accident occurred but slight pain and redness, and no serious complication ensued. The physiological results were most remarkable. The nervous activity increased in every way; muscular power became much superior to what it was before; intestinal and vesical secretions recovered such vigor as had long since disappeared; and capacity for intellectual labor considerably increased. In short, the general effects have been those of a new lease of young manhood. Am I the victim of a delusion or self-suggestion? Perhaps I am, but I believe not. In my opinion no other substance injected could

have acted likewise, and my conclusion is that the liquid contains a substance possessing special properties and an undoubted influence on the nervous system. I am aware that my demonstration is not strictly scientific; new and more rigorous investigations will be necessary, and animals are not adapted to the purpose because psychical phenomena cannot with them be readily brought to light. Man alone will answer; but as I am determined to try on no fellow-being such experiments, I have made them hitherto, and shall continue them on my own person." At a subsequent meeting of the same society, on June 15, alluding to the new vigor imparted to his general functions, Dr. Brown-Séquard added: "The most remarkable feature is that such changes should have taken place in the tissues of an old man, who, now 72 years of age, and long since fatigued, has found his muscular, cerebral, and spinal systems so wonderfully strengthened. Yet only dynamical effects can have been produced, since it is well known the anatomical constitution can only be modified gradually, and after a long time, while the beneficial influence of the injections was felt immediately. Since June 1 I only took one injection,—on June 4,—to see how long the influence would last. And now I may here affirm that, for the past ten days, I have experienced no decrease of my nervous or muscular powers, and no loss of organic vigor. During those ten days I have been travelling, and found myself able to stand the fatigue of the journey and long walks in a manner quite beyond my strength before I began the injections. For the present I shall not carry further the endeavor to find out how much longer the effect would endure, but propose to resume the injections to better and more fully analyze their mode of action. . . . In my present experiments I have used the juice of the gland obtained by trituration, and I think it is the liquid during the elaboration process and not the sperm itself which we are dealing with. My reason for believing so is that when the trituration liquid is injected into the tissues of animals, the effects produced are much like those observed upon myself, while nothing of the sort will be noticed with the sperm itself. Another side of the question is, whether the influence of the testicles over man's vital phenomena is not matched by the ovaries over woman's. All that is known so far of the condition of castrated women, such as are thus purposely mutilated in India or operated here for surgical reasons, tends to show they are really female eunuchs. I have been wondering whether triturated ovaries would produce on women effects similar to those I have experienced personally, and expect soon to begin the investigations under very good conditions, but would prefer they be made by others, and preferably by lady physicians, either upon themselves or other women. For this reason I appeal to the medical press to help me to elucidate this very important biological problem." It is scarcely necessary to add that Dr. Brown-Séquard's papers have made more noise in the secular than in the medical press. Some are shaking their heads at what they consider a return to the period when lion's heart was eaten to give courage and lynx's eyes to sharpen the sight. But your correspondent, who heard, on June 17, Dr. Brown-Séquard speaking at the Academy of Sciences, may assure the readers of the THERAPEUTIC GAZETTE that there is apparently nothing the matter with his mental faculties.

A new heart-poison was at the June 17 sitting brought to the attention of the Academy of Sciences by Dr. Arnaud, of the Museum, already known for his researches on ouabaïne and strophanthine. The active principle there shown in fine colorless crystals has been by him extracted from "tonguin," an ordeal poison of the Madagascar natives, and named tonghinine, from the botanical name, *Tonghinia toxifera*, of the plant producing the substance. A limited number of physiological experiments instituted by Dr. E. Gley, show the new chemical to be very poisonous, and to act on the heart, much after the fashion of ouabaïne and strophanthine. The resemblance will astonish no one, considering the tonghinia belongs, like the plants furnishing these, to the Apocyneæ family. Further and more complete investigations are in progress to ascertain the properties of the chemical and its therapeutical value.

Another legend disappearing is that of the Constantinople vagrant dogs' immunity from hydrophobia. Not only are there mad dogs in the dirty streets, but their number has of late increased to such an extent that within a short time forty-one persons bitten by rabid dogs recently applied for treatment to Dr. Zoeros-Pacha, at the Constantinople Pasteur institute.

That the first portions of the rain falling during a storm are generally impure has long been known. The time-honored advice given in text-books to those who depend upon heaven's alembic for their distilled water, to wait a while before they begin to collect the falling rain, has again been proved to be very wise by a communication recently made to the Acad-

emy of Sciences. Dr. Domingos Freire, writing from Rio de Janeiro, related that, wondering at the strange symptoms of an epidemic fever which broke out last March, it occurred to him to examine the conditions of the atmosphere. To this effect he condensed some of the air moisture during the warmest hours of a hot day. This was on March 13, corresponding to September in our hemisphere. The liquid thus obtained proved deadly to birds in very small doses,—namely, 15 minims, in less than two hours. Chemically tested, the water proved to contain ammoniacal compounds, or, at least, nitrogen so combined as to be thus transformed by caustic potash at a boiling heat. Microscopically, the water was found to contain many spores, forming dense colonies, but devoid of agglutinative matter, unaffected by aniline dyes, and possessing the characteristic Brownian motion sometimes so rapid as to render the spores invisible in the microscopic field. At the time there had been but little rain for several months, and the sanitary conditions of Rio, as is well known, are none of the best. Near the end of March torrential rains set in, and the fever soon disappeared. The atmospheric moisture, on being condensed at this period, proved to be nearly harmless to birds, and to contain but very little combined nitrogen. M. Freire's conclusions are that some epidemic outbreaks are probably due to telluric emanations partly remaining in the atmosphere, and partly condensed in an insufficient quantity of rain-water used for drinking purposes.

Some time since Dr. Peyraud, of Libourne, made interesting investigations on what he called tanacetic rabies. A number of observations made on oil of tansy (oleum tanaceti) injected into the veins of animals, led him to think he had found a substance causing a sort of artificial rabies, and consequently apt to vaccinate animals against true rabies. His memoir was presented to the Academy of Medicine, and by that body referred to a committee to examine the paper and report upon it. The following were the conclusions arrived at by the committee and accepted by the Academy: 1. Oil of tansy, when injected in certain doses into rabbits' veins, will cause a poisoning whose symptoms much resemble those of true rabies. 2. A ten-per-cent. solution of chloral, on being mixed before inoculation with the rabic virus, appears to alter, and even destroy, its virulent properties. 3. When oil of tansy is injected near the point where a rabic inoculation has been performed, it seems to act to a certain extent as an antidote. The number of cases so far observed by Dr. Peyraud is, perhaps, too small to warrant a definite conclusion, but the experiments are very interesting, and deserve to be carried on further. 4. The same remark substantially applies to the effect of chloral injections. 5. As regards the preventive value of oil of tansy injections against a subsequent inoculation of rabic virus, the experiments are still less conclusive, owing chiefly to their insufficient number. In consequence the committee were of opinion that "Dr. Peyraud should be thanked for his interesting researches, and encouraged to continue them, and endeavor to impart more precision to the method recommended by him."

The Congress of Hygiene and Dermography will be held this year in Paris from August 4 to August 11. When the sixth meeting, in 1887, at Vienna, was ready to adjourn, London was the place proposed for the seventh gathering, when the French delegates remarked that, owing to the Paris Exhibition in 1889, which would bring together many scientists and interesting materials from all parts of the world, it would be preferable to postpone the London meeting to 1891, and to meet in Paris in 1889. The assemblage allowed itself to be convinced of the necessity of a trip to the gay capital by the Seine, and accepted the invitation. Ample accommodations will be provided at the Paris Faculty of Medicine, and "delegates from all and any countries may rest assured of a cordial welcome," which means that German delegates are invited and will be courteously treated, notwithstanding all that some German papers may have been saying to the contrary. The Congress of Zoology, on the other hand, will meet, August 5 to 10, at the College of Pharmacy, under the chairmanship of M. Milne-Edwards, who is a professor in that institution. As to the Congress of Therapeutics, Materia Medica, and Pharmacy, they have—as was announced in the THERAPEUTIC GAZETTE—chosen August 1 to 5 as the date, and the Palais des Sociétés Savantes as the place of their international gathering.

Pharmacy, chemistry, and allied branches, both foreign and French, are well represented at the Exposition. Medicine can scarcely be, considering the nature of things. It is only while prospecting through the immense territory covered by the endless buildings that one now and then comes across anything of strict medical interest. Yet it may be mentioned that surgical-instrument makers now discard wooden handles, and everything indented, at present, considered nests for microbes. Polished metallic handles are the fashion, and

only very large fluting, to afford good hold, is allowed. The idea is to secure complete and easy cleaning and antisepsis. Of course metallic handles are generally hollow,—solid metal would be too heavy,—and either of pure nickel or at least nickel-plated. Such instruments will readily stand the heat of sterilizing stoves. Even the instrument-cases of the best makers now contain no velvet or such material. They are made of solid wood, curved and polished, because easier to clean thoroughly. Among usual instruments a new and improved system of articulated scissors and forceps has been presented. In therapeutics nothing very novel or striking has come out; yet there are many interesting items to be seen, but so scattered in different places that long and patient journeying will be necessary to bring the whole into a presentable shape. The Therapeutic Congress is to have, near the place of meeting, a special exhibition, all to itself, where specimens of the various drugs to be considered will be displayed.

PARIS, June 21, 1889.

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## BERLIN.

(From our Special Correspondent.)

Microbes of Carcinoma—Singular Effects of the Carlsbad Springs—Poisoning with Colored Jerseys—Cure of Pyæmia—A Case of Pernicious Anæmia—Barbers' Itch—On Aseptic Suppuration—Harmless Gonococci—Medical Congresses.

In spite of the doubtful laurels won by Dr. Scheurben, of the Charité, with his discovery of the alleged specific microbes of carcinoma, the chase after these germs continues unabated. The desire to have each malady represented by its specific bacillus is a deplorable and irrational outcome of the modern bacteriological school. Dr. Thoma, of Dorpat, in a recently published paper, claims to have discovered singular microbic organisms in the epithelial cells of carcinomatous tumors. The observer found small cell-like structures in the epithelial nuclei of carcinomata which differed so materially from all known kinds of cells that he felt compelled to classify them among the parasitic organisms. These microbes, for which thus far no pathogenic claim has been extended, are one-celled organisms measuring four to fifteen micromillimetres in diameter, and can be seen distinctly with the aid of hæmatoxylin, safranin, eosin, and alum-carmine. They consist of protoplasm and a nucleus, have a regular round or oval form, and show a strong refraction of light. Thoma has repeatedly seen them single or in clusters of four to six embedded in the epithelial nuclei of carcinomata of the breast, of the stomach, and the intestinal tract. No pure cultures, nor other experiments which might serve to determine the exact nature of these microbes, have thus far been reported by Thoma.

This being the season when hundreds of Americans visit the celebrated Carlsbad Springs, in Bohemia, it will probably interest you to learn of some singular effects which the Carlsbad cure produces in certain ailments. It has been found by repeated observations both in chronic gonorrhœa and chronic malaria that the use of the Carlsbad Springs changes the chronic and often latent form of the mentioned affections into an acute or subacute form. Dr. Pollatchek, of Carlsbad, has paid particular attention to this subject for a number of years and has just issued a pamphlet relating to it. In all cases of chronic or latent gonorrhœa which showed this singular exacerbation after the use of the Springs, the observer has been careful to exclude any possible new infections, and in regard to malaria it is well known that Carlsbad and its vicinity is absolutely free from a malarial character. Pollatchek would probably not have published these observations unless his views had been confirmed by the identical experience of Dr. Pisch in regard to Marienbad. In obscure gastric affections with a suspected malarial element a Carlsbad cure serves, as it were, as a diagnostic factor, and brings to light the true character of the affection. In these cases, of course, the coming forward of the malarial nature is a highly welcome phenomenon, as the ailment usually yields promptly to quinine. Less welcome probably may these effects of the Carlsbad cure be to young husbands whom the Bohemian Springs force to atone for ancient sins. The explanation of the peculiar effects of the Carlsbad Springs in chronic malarial and gonorrhœal disorders is difficult. It has been said that the sulphate of magnesium which is contained in the springs of Carlsbad, Marienbad, and Glax has something to do with this process of exacerbation. The heightened tissue-changes, brought about by the Carlsbad cure, may in some way revive, as it were, the dormant microbic causes of gonorrhœa and malaria.

In spite of the frequent occurrence of poisoning with colored articles of toilet, particularly of ladies' wear, both the public and the health authorities exhibit still a good deal of the go-as-you-please system in this respect.

There is scarcely a week passing but some cases of this sort are reported. Dr. Weyl made some interesting remarks on this subject at a recent meeting of the Berlin Medical Society. He has repeatedly detected chromate of lead in various articles of wear, and has traced intoxications to this chemical. Jerseys are often impregnated with poisonous substances, particularly with safranin, and poisoning from this source is not rare. The same substance, a derivative of tar, is in Europe frequently used to color liquors. Safranin, as experiments have shown, does not act as a poison if placed in the stomach, but proves a highly toxic agent if injected subcutaneously. In one instance, observed by Weyl, indigo-sulphate of sodium was found to be the source of poisoning. A woman presented herself for treatment at the Charité, showing œdema and inflammatory reddening of the legs. Inquiry revealed as the cause of these symptoms new stockings which she had worn for three days. All symptoms disappeared promptly after removal of the poisonous stockings in which indigo-sulphate of sodium was found present. This chemical *per se* is harmless, but on the addition of water great quantities of sulphuric acid are liberated, and, of course, produce considerable irritation. Lassar has frequently seen pityriasis rosea as the result from red jerseys, and was able to trace the poisoning to various coloring matters, particularly to chrysoidin, which is also frequently used for the dyeing of stockings. A stricter supervision of these branches of manufacture than has hitherto been practised is here clearly indicated.

Professor Rose, of the Bethanien Hospital, of Berlin, recently read before the Society of Berlin Surgeons an interesting paper on pyæmia, in which he advocated greater therapeutic efforts in the treatment of that affection. Formerly pyæmia was regarded as an almost invariably fatal complication of a disease. Since the publication of Roch's labors on the treatment of surgical infections, a new light has been thrown on the nature of the pyæmic process. Roch has succeeded in producing the affection artificially in rabbits, and showed that the pyæmic process was identical in animals and man, presenting in either instance infarcts of the lungs, swelling of the spleen, and remote metastases. The contagious character of the disease was shown by Roch to disappear if the virus used was greatly attenuated. The blood was shown to be able to destroy a small quantity of the cocci of pyæmia, while in the presence of a large quantity of these microbes the pyæmic process developed. A drawing made by Roch presents the cocci of pyæmia crowding in a venous capillary around the white blood-corpuscles and arresting the progress of the latter which leads ultimately to thrombosis. From the nature of these phenomena, Rose deducts the advisability of limiting as much as possible the number of cocci in the pyæmic processes coming under observtion. In his practice he has therefore made it a principle to destroy as soon as possible every pyæmic focus by most copious application of antiseptics and by the simultaneous exhibition of tonics. This procedure is intended not only to destroy the local pyæmic depots, but also to limit the number of cocci in the blood. Rose detailed a number of cases where this plan of treatment has preserved life, while an expectative treatment of pyæmia invariably leads to fatal results.

Dr. Meyer, of Berlin, reports a case of pernicious anæmia successfully treated by washing out of the stomach. The case occurred in a woman, 25 years of age, shortly after delivery, and was attended by extreme debility, considerable fever, a pulse of one hundred and thirty, and incessant vomiting. The patient finally grew so weak that she could not sit up any more and became wholly apathetic. Meyer tried the washing out of the stomach as advocated in pernicious anæmia by Sandoz. The washing out of the stomach was continued until the water came off clear, and about six litres had run through. After this process sleep ensued, lasting for three hours, and after awakening the patient showed a gratifying return of vital energy. The fever soon disappeared, and in ten days all graver symptoms had gone. As to the cause of the disease, Meyer believes that gastric disturbances, which so frequently accompany pregnancy and delivery, were the etiological factors in the case. It is probable that fermentative processes produce in these cases toxic substances which find their way into the circulation, and cause pernicious anæmia.

In the recently organized Dermatological Society of Berlin, Dr. Rosenthal, of this city, read an instructive paper on sycosis or barber's itch. The question whether this disorder is of parasitic origin or not has been the subject of repeated discussion. Hebra himself doubted the microbic nature of the affection. At present it is believed that the parasite known as trichophyton tonsurans is the usual cause of sycosis, though the disorder might also arise from non-parasitic causes. Blunt razors, alcoholic drinks, and spiced victuals are at present no longer regarded as possible causes of barber's

itch. It is, however, conceded that inveterate eczemata may lead to sycosis. Again, acute and chronic coryza are known to be frequently at the bottom of the affection. And as these disorders are often sequelæ of scrofulosis, the latter affection is to be regarded as a predisposing cause of sycosis. Still an eczema is not necessary as a connecting link between catarrhal affections of the nose and sycosis. In passionate snuff-takers the disorder is of frequent occurrence, and, as this habit is seldom discarded, of course, is hard to cure in these instances. Recently, Behrend has also viewed certain internal factors as cause of the disease, but has failed to specify the exact nature of these internal causes. Wertheim believed that in many instances the disease is caused by a disproportion between the thickness of the hair and the diameter of the hair-follicles, and explains the localization of sycosis in the face by the fact that in that region the vertical section of the hair is larger than that on the head. An interesting etiological view has been advanced by Hebra. He believes that during the formation of a new hair-follicle the new hair enters instead of the new follicle the neighboring old follicle, and that the presence of both the old and the young hair in a single hair-follicle causes through mechanical pressure irritation and inflammation of the follicle. Other dermatologists have assumed an intimate connection between sycosis and impetigo or acne. As to the treatment of barber's itch, internal remedies are at present regarded as useless, though French physicians are still in the habit of prescribing alkalies and arsenic for it. The local remedies, at present used, are either of a mechanical or of a medicinal nature. The former are intended to open the pustules and remove the pus, and include shaving, epilation (depilatories), scarification, massage, and the sharp spoon. The latter application has to-day been almost wholly discarded. The razor is probably the best and least painful means of opening the pustules. Numerous drugs have been tried in sycosis with more or less success, all for the purpose of softening the nodules and closing the small wounds. Rosenthal mentions among the more useful local applications ungt. Habræ, ungt. precip. alb., lanolin, salicylic plaster, the oleates (as advocated by Shoemaker), salicylate of mercury, pyrogallic acid (in ½-per-cent. alcoholic solution), naphthol (in 5-per-cent. solution of oil), chrysarobin (1 part in 30 of fat), ichthyol with potash soap (Unna's treatment), resorcin, and corrosive sublimate.

In very obstinate cases caustics, such as concentrated acetic acid, nitric and chromic acids, and silver are indicated. Rosenthal does not employ any of these remedies, but follows a treatment of his own, with which he has obtained excellent results in twenty-one cases. The advantages of his treatment are ease of application, painlessness, and rapidity of cure. He orders the seat of the affection to be closely shaved daily, and orders the following ointment to be rubbed in twice a day with the finger:

℞ Acid. tannic., gr. xlv;
Lact. sulph., ʒiss;
Zinc. ox.,
Amyl., aa ʒiv;
Vasel., ℥i.
Sig.—To be used twice daily.

This application causes in about a week the pustules to dry up and to diminish greatly in number, and in about a month a very slowly disappearing erythema is the sole remnant of the disorder. Relapses, unfortunately, are rather frequent in barber's itch.

Kaufmann has recently proven by experiment that suppuration may under certain conditions be an aseptic process. He injected under strict antiseptic precautions a sterilized solution of digitotoxin in alcohol into the cellular tissue of dogs, and produced invariably a grave phlegmonous suppuration. But no microbes could ever be detected in the pus or the surrounding tissues, either microscopically or by the inoculation test. Gravitz has made similar experiments with the same results, and believes that, wherever suppuration is caused by cocci, the cause of suppuration is not the cocci themselves, but their ptomaïnes.

Strauss found numerous gonococci in the gonorrhœal flow from a boy 16 years of age, who professed never to have had any sexual connection, but had been guilty of onanism. Strauss believes that the gonococcus is a harmless inhabitant of the urethra, and only in case of irritation the latter becomes pathogenic. Fränkel, as is well known, has claimed a similar *rôle* for his pneumococcus.

The committee in charge of the Tenth International Congress of Medicine, to take place in Berlin next year, has just been organized. Virchow, Bergmann, and Waldeyer were chosen as chairmen of the committee. The Congress will open on the 6th of August, and promises to be a grand affair.

The annual meeting of the German Physicians and Naturalists will take place this year in Heidelberg in the latter part of September.

June 17, 1889.

*CHRONIC ARSENICAL POISONING.*

To the Editors of the THERAPEUTIC GAZETTE:

GENTLEMEN:—Although I read with interest and gratification your editorial of April 15 on chronic arsenical poisoning, I feel bound to correct the impression that all the cases referred to in my paper had been observed by myself.

All but one were, in fact, communicated to me by physicians of Boston and the vicinity, in answer to inquiries on my part, though none of them had been published before.

While on the subject, I should like to add that, since the publication of the paper, several other instances have been brought to my notice, where arsenic, apparently traceable to wall-paper, has been found in the urine.

One of these was that of a gentleman, about 60 years of age, who has been under my care for a number of months. His symptoms consisted in profound and progressive anæmia, causing excessive pallor, puffiness of the face, œdema of the ankles, with great weakness, and perhaps causing also a loud and rough systolic murmur at the apex of the heart, with enlargement.

Not being satisfied with the diagnosis of an anæmia secondary to cardiac disease, and not wishing to adopt that of essential anæmia without eliminating other causes, I advised an analysis of the wall-papers, which had been put on twenty years before, by one of the best local dealers, who asserted that they were practically free from arsenic.

Fifteen papers were analyzed by Dr. Charles Harrington, of Harvard Medical College, with the result that he pronounced them about the worst lot he had ever tested.

All fifteen contained arsenic, eleven of them large amounts, and six of these very large amounts.

The papers were removed about a month ago, and the patient has been steadily and markedly gaining, so that he has in a measure resumed his business, which he had practically abandoned.

It should be said that the improvement really began shortly before the removal of the papers, under the influence of iron, large quantities of food, and bathing.

It does not appear to me, however, that this militates against the diagnosis of toxic anæmia, and, on the other hand, I do not know to what other cause an anæmia could be due, so profound as this was and so distinctly progressive in character, and yet apparently curable under simple tonics, and occurring in a man of 60, free from grave anxieties and living under thoroughly favorable conditions.

The patient had never presented characteristic local symptoms of arsenic-poisoning, and there had been no other case of serious progressive illness in the house, but the health of the rest of the family had not, on the whole, been good.

Three analyses of the urine, the last of which was made about five weeks after the removal of all the papers, showed that arsenic was being eliminated. During the time of the removal, and for a few days afterwards, the patient absented himself from the house, to avoid unnecessary exposure.

Papers recently manufactured in this vicinity are mostly free from dangerous amounts of arsenic, but this case shows that the same cannot be said of even the best papers of a few years back, with which our walls are still largely covered.

Yours truly,

JAMES J. PUTNAM.

106 MARLBORO' STREET,
BOSTON, June 13.

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*GLYCERIN IN DYSPEPSIA.*

To the Editors of the THERAPEUTIC GAZETTE:

GENTLEMEN:—In the *Medical Age* of February 11, 1889, I attempted to call the attention of the medical profession to the very great value of glycerin as a remedy in indigestion and dyspepsia. In addition to what I there said, I would like to make the claim in your journal that glycerin in drachm doses will be found most valuable in preventing stomach troubles in convalescence from debilitating diseases, that it will often cut short an attack of indigestion, and that it will *prevent* and *cure* a large proportion of cases of "summer diarrhœa" of children. It will also to a great extent control the vomiting of pregnancy.

I am most anxious to have these claims thoroughly tested. I am aware that new methods often appear to yield far better results in the hands of the originators than with those who subsequently use them. Therefore I request that every physician having cases of stomach weakness, acute or chronic, from whatever cause, summer diarrhœa, vomiting of pregnancy, etc., test this remedy and report results. It is simple, it is harmless, it is cheap, and it is efficient.

J. A. POLLARD, A.M., M.D.

NEHAWKA, CASS CO., NEB.,
June 20, 1889.

## Notes and Queries.

### *CUPREINE.*

Cupreine, the characteristic alkaloid of the bark of *Remijia pedunculata*, has been the subject of a thorough investigation by DR. A. OUDEMANS, JR. (*Chem.-Zeit. Rep.*, May 11, p. 143), who confirms generally the statements made respecting the alkaloid by Dr. Hesse. The composition of the alkaloid crystallized from ether and dried at 130° C. is given as $C_{19}H_{22}N_2O_2$, and when separated from an alcoholic solution by water and dried in air as $3C_{19}H_{22}N_2O_2 + H_2O$. Cupreine behaves as a diacid base, and gives with most acids two series of salts, which Dr. Oudemans distinguishes as "basic" and "neutral." With some acids, as, for instance, sulphuric acid, the alkaloid forms still another salt, containing double as much acid as the neutral salt, which is, therefore, considered an "acid" salt. The neutral and acid salts are, as a rule, pretty freely soluble in water, but the besic salts are less soluble in water, and the aqueous solutions are usually yellow, though the same basic salts give with absolute alcohol perfectly colorless solutions. The colorless solutions of neutral salts are not, however, colored by a certain quantity of basic salt which results from dilution and decomposition. The rotatory power of free anhydrous cupreine in ninety-seven per cent. alcohol is given as $[a]_d = -173.3°$.—*Pharmaceutical Journal and Transactions*, June 8, 1889.

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### *THE NEW QUARANTINE STATION AT THE ENTRANCE TO DELAWARE BAY.*

It will be remembered that Congress at its last session appropriated a considerable amount of money for the equipment of seven quarantine stations,—five for the Atlantic coast and two for the Pacific. Of this appropriation about seventy-five thousand dollars was assigned for the establishment of a thoroughly equipped station for the protection of the Delaware Bay and River. Heretofore the only safeguard against the introduction of contagion below the Lazaretto has been the little hospital of the United States Marine Hospital Service near Lewes, simply designed for the treatment of sick or wounded seamen, with no adequate provision for the isolation of those suffering from infectious diseases. So well has this service been administered, however, that it has on several occasions detained and disinfected pest-laden vessels and their crews, and thus stayed at the threshold causes which might have resulted in disastrous epidemics had they gained admission. At or near this point the Legislature of Delaware has offered to cede to the United States the land necessary for the proposed buildings and appurtenances. The secretary of the State Board of Health of Pennsylvania, Dr. Benjamin Lee, has been designated a commissioner on the part of the United States to meet commissioners appointed by the State of Delaware, and, in conjunction with them, to locate and fix the boundaries of this reservation. This preliminary will be speedily settled, and work will be begun at an early date. The fumigating steamer for the station is now in process of construction at the Pusey & Jones Company's extensive works at Wilmington, Delaware.

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### *OXYNAPHTHOIC ACID.*

The antiseptic properties of oxynaphthoic acid, or, as it is also called, naphthol-carbonic acid, is the subject of an article in a Vienna medical journal by DR. A. SCHÜCKING, who has made use of this substance in various ways. Its chemical formula is $C_{11}H_8O_3$, or $C_{10}H_6{<}^{OH}_{COOH}$. It is a light gray powder, with scarcely any smell, and almost insoluble in water, but readily soluble in alcohol, ether, caustic alkalies, and alkaline carbonates. Its antizymotic power is five times stronger than that of salicylic acid, and will prevent the putrefaction of water in which meat has been dissolved even in as small a proportion as 1 in 20,000. It is well known that the soda salt of salicylic acid is devoid of antiseptic properties, but this is not the case with the new acid. It seems, too, to be capable of being used internally without producing any disorder of the digestive apparatus. In large doses, however, it is toxic. Rabbits die after the ingestion of from 22 to 45 grains, and then present signs of stomatitis, gastro-enteritis, hyperæmia of the lungs, liver, and kidneys, also albuminuria. The acid can be detected in the urine by striking a violet, blue, or red color with nitric acid, and a blue or in proper quantity a green color with perchloride of iron. Dr. Schücking found *a*-oxynaphthoic

acid act very well in many cases as a substitute for iodoform, having a great advantage over the latter in being almost completely devoid of smell, besides which it appears to exert no specific action on the central nervous system, and is very much less costly. When dusted over sluggish granulations it acts as a mild caustic and stimulant. For washing out the vagina he employed a solution of the combination of the acid with phosphate of soda, the strength varying from .3 to one per cent. Dr. Schücking does not, of course, pretend that α-oxynaphthoic acid is the best antiseptic for all purposes, but brings it before the profession as a valuable addition to our present category of these remedies, especially recommending the solution with phosphate of soda.—*Lancet*, June 8, 1889.

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*GRAFTS OF FROG'S SKIN IN CHRONIC ULCERS.*

In the *Rüsskaia Meditzina*, Nos. 41, 42, and 43, 1888, p. 649, Dr. Fëodosy Nesterovsky, of Bratzlav, speaks favorably of frog's-skin grafting, a method which was first proposed by Dr. Allen in 1884, and subsequently practised successfully by Drs. O. V. Petersen, of St. Petersburg, Perez, Baratoux, Dubousquet-Laborderie, etc. Dr. Nesterovsky relates four cases of old-standing, intractable, extensive, and deep ulcers of the leg, foot, and thigh, where, after all ordinary means had failed, the transplantation of grafts of frog's skin was invariably followed by a permanent healing in from nine to fourteen days. Dr. Nesterovsky takes an ordinary water frog, and keeps the lower portions of its body immersed in a sublimate solution (1 to 1000) for five minutes; then he pinches up a piece of skin on the abdomen with forceps, and cuts out as many grafts as are required, each the size of a finger-nail. Having washed the pieces, as well as the ulcer, with a four per cent. solution of boracic acid, he carefully places the grafts on the granulating surface, and covers the part with a layer of boracic gauze and a piece of tow, fixing the whole with wax-cloth and a starched gauze roller. The dressing is changed, and the ulcer washed first on the third or fifth day. The writer summarizes his experience as follows: 1. In all cases of extensive and badly cicatrizing ulcers, skin-grafting is indicated. 2. Skin which is quite free from glands and hair is most suitable for the purpose. 3. The frog's skin completely satisfies those conditions. 4. The method is simple, safe, easily used everywhere, cheap, and most effective. This method of grafting has, we believe, been tried with success by Mr. Stanley Boyd, of Charing Cross Hospital.—*British Medical Journal*, June 1, 1889.

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*SHEPHERD'S PURSE AS A HÆMOSTATIC.*

Dr. K. E. Wagner publishes in the *Vrach* some observations which tend to show that the capsules of shepherd's purse (capsellæ bursæ pastoris) when made into a tincture have very considerable hæmostatic properties. The cases were of different kinds, two of them being of uterine hemorrhage, two of hæmoptysis, and one of epistaxis. In all these a marked effect was produced, the hemorrhage being either entirely arrested, or, at least, very greatly diminished. No unpleasant effects, such as headache or dyspnœa, were observed, even when 3 tablespoonfuls of the tincture were taken in the course of twenty-four hours, the usual dose being from 4 to 6 tablespoonfuls.—*Lancet*, June 8, 1889.

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*CREASOTE IN FLATULENT DYSPEPSIA.*

As creasote is an antiseptic, it may be expected to diminish fermentation, and to this effect it is especially efficacious when associated with an alkaline salt. In the treatment of flatulent dyspepsia the following formula has been recommended by Dr. Eloy in the *Gazette Hebdomadaire de Médecine et de Chirurgie*, May 31, 1889:

> Pure creasote, gtt. x;
> Bicarbonate of sodium, gr. cxx;
> Pulverized gum arabic, q.s.
> Water, ℥v.
>
> A coffeespoonful to be given one hour after each meal.

If gastric atony and insufficient gastric secretion are supposed to be the cause of the affection, the following prescription may be used:

> Pepsine, gr. lx;
> Creasote, gtt. x;
> Subcarbonate of bismuth, gr. lx.
>
> This is to be divided into thirty packages, of which one may be given in a gelatin capsule.

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A CORRECTION.

In the Therapeutic Gazette for Juue 15, 1889, page 406, reference is made to the use of the sulphate of calcium as a remedy for infantile convulsions, recommended by Mr. H. Valentine Knaggs, in the *Archives of Pediatrics* for May, 1889. Instead of sulphate of calcium, the sulphide of calcium is intended.